Planning the Future of Student-Centered Graduate Education at Oregon State University: A Five-year Agenda

EXECUTIVE SUMMARY

Purpose: This document is the culmination of a planning process to advance the quality and effectiveness of graduate education while aligning the strategic direction of the Graduate School with the strategic directions of the university. Each of the strategic goals for graduate education is supported by a series of action items which the Graduate School will implement over the next five years.

Planning Process: The planning effort was led by a 16-member committee representing many academic programs and administrative offices, with contributions from graduate students, internal and external data, and review by The Graduate School staff and Graduate Council members. Details of the planning process can be found in Appendix A.

Overarching Goals of the 5-year Agenda: The agenda is organized around three core themes for improving the graduate student experience, advancing high-quality graduate education, and meeting enrollment goals:

1. Recruiting, Retaining and Supporting Students
2. Ensuring Program Excellence
3. Growing Opportunities for Financial Support

The three overarching goals detailed herein and summarized below include specific objectives, action items, and indicators for measuring the success of the outlined activities.

GOAL 1. Increase our graduate student population to 25% of total university enrollment through recruitment and retention of high achieving and diverse students

- Objective 1.1. Effectively recruit high achieving students and ensure representation of under-represented minorities
- Objective 1.2. Increase the efficiency of the application and matriculation process, and improve timely and clear communication with applicants and matriculants
- Objective 1.3. Provide centralized support for best practices in graduate education and professional development
- Objective 1.4. Ensure that student services provided on the Corvallis and Bend campuses include those that are graduate-student focused and specifically meet the unique needs of graduate students
- Objective 1.5. Improve mentoring and advising relationships between students and graduate faculty
- Objective 1.6. Improve communication among the Graduate School, graduate students and graduate faculty

GOAL 2. Continuously improve program quality

- Objective 2.1. Improve the national and international stature and reputation of OSU graduate programs
- Objective 2.2. Improve quality assessment of graduate programs
- Objective 2.3. Improve the quality and accessibility of graduate courses
- Objective 2.4. Grow the number of graduate faculty and their capacity to train students
- Objective 2.5. Improve and enhance transdisciplinary and interdisciplinary opportunities in graduate education
- Objective 2.6. Increase the number of joint degree graduate programs within OSU and with other institutions

GOAL 3: Grow and invest resources to enhance graduate education opportunities

- Objective 3.1. Create new or restructured graduate programs where there is capacity
- Objective 3.2. Create endowments for graduate fellowships
- Objective 3.3. Incentivize assistantship opportunities for graduate students
- Objective 3.4. Assess and revise GTA salaries and allocation across and within colleges and programs
- Objective 3.5. Increase the number of GTAs funded by Ecampus revenue
- Objective 3.6. Target centrally-administered fellowships, scholarships and other resources to support the goals of this strategic plan

Expected Outcomes: The actions resulting from this 5-year plan will directly contribute to the advancement of excellence and innovation in graduate education at Oregon State University. We will support university enrollment goals and serve as a primary contributor to OSU's three signature areas and the university's mission. The success of this plan relies on collaborative efforts between university administrative offices, programs, faculty, staff and students. It is our belief that through partnerships and forward-thinking principles, this agenda serves as a strong foundation for positioning OSU as leader in graduate training in the U.S. and globally, while also pioneering new approaches to graduate training and cultivating a quality experience for graduate students during their tenure in the OSU community.

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Introduction

As the state's land, sea, space, and sun grant institution, Oregon State University (OSU) offers graduate programs in a broad array of fields including both traditional disciplines as well as transdisciplinary programs aimed to promote fundamental understanding, create solutions to global challenges, and address emerging opportunities. Oregon State University offers 80 graduate degree majors with flexibility that allows students to design programs suited to their academic and career goals.

This document is the culmination of a planning process to align the strategic direction of the Graduate School with the strategic directions of the university.

Our **vision** is to position OSU to be a leader in graduate training in the U.S. and globally, and also to be a leader in exploring new approaches to graduate training. The 5-year agenda outlined herein will directly contribute to the advancement of excellence and innovation in graduate education at Oregon State University, while also supporting university enrollment goals and serving as a primary contributor to OSU's three signature areas and the university's mission.

Mission of the Graduate School

The Graduate School contributes to OSU's goal of achieving top ten land grant status by providing leadership in all aspects of graduate education, through advocacy for the critical importance of the graduate enterprise to the university's mission, and by providing core centralized services to the graduate community. In partnership with the graduate faculty, the Graduate School plays a leadership and advocacy role to ensure that OSU attracts the best graduate students and delivers a compelling and high-quality graduate experience that prepares them to create new ideas and knowledge, to educate others, to make positive impacts on society, and to lead innovation.

Alignment of Graduate Education with OSU's Strategic Directions

OSU has identified three signature areas of distinction: 1. Advancing the Science of Sustainable Earth Ecosystems; 2. Improving Human Health and Wellness; 3. and Promoting Economic Growth and Social Progress. These three signature areas contribute to the overarching goal of fostering exceptional educational, research, and outreach initiatives that sustain human well-being and improve the quality of human life. Graduate education at OSU is at the interface between those using knowledge and those developing knowledge. Our graduate programs must train a diverse student body in core disciplinary principles while also encouraging collaboration and effective communication across disciplines in an effort to solve complex societal problems.

OSU has two broad commitments toward this goal: (1) to lead in developing a globally competitive workforce and an informed and capable citizenry; and (2) to address multifaceted national and global challenges that resist simple technical or social solutions.

The OSU strategic plan additionally articulates three more specific goals:

Goal 1: Provide outstanding academic programs that further strengthen performance and pre-eminence in the three Signature Areas of Distinction. We will focus repositioning and development of new graduate programs to align with the three signature areas, and we will work to increase graduate and professional student enrollment to 25% of the OSU student population.

Goal 2: Provide an excellent teaching and learning environment and attain student access, persistence, and success through graduation and beyond that matches the best land grant universities in the country.

Goal 3: Substantially increase revenues from private fundraising, partnerships, research grants, and technology transfers while strengthening our ability to more effectively invest and allocate resources to achieve Goal 2.

Overarching Goals of the 5-year Agenda

GOAL 1. Increase our graduate student population to 25% of total university enrollment through recruitment and retention of high achieving and diverse students

More effective recruitment, retention and degree completion will be needed to meet the dual expectations of program excellence and increased graduate student enrollment on the OSU main campus and on the Cascades Campus, while also enhancing graduate faculty involvement in graduate student training at our many distributed research and extension centers around the state. Competitive financial assistance is such an integral component of recruitment, retention and support that it is addressed separately in the last section of this plan (Goal 3). In Goal 1, we will target and support programs to recruit and retain the best and brightest graduate students in the world with a specific focus on the inclusion of under-represented minorities, including students with disabilities. We must provide all graduate students with effective mentoring and other support structures necessary for success in their graduate programs, in their search for employment, and in their post-graduation careers.

Objective 1.1. Effectively recruit high achieving students and ensure representation of under-represented minorities

We need a coordinated recruiting system that integrates efforts at the program and unit levels with centralized support to achieve enrollment goals for all programs across the campus (see Appendix 4 for our enrollment plan). These efforts must ensure that under-represented minorities are reflected in our student body at least in proportion to those in our geographic region.

<u>Action Items</u>
1.1.1: Poll individual programs to identify the extent, types and success of recruitment activities currently occurring at the program and unit levels at OSU.

1.1.2: Identify programs with the capacity (sufficient well-qualified faculty, infrastructure, support mechanisms, etc.) for growth, and develop enrollment growth strategies for each of these programs. Recruitment efforts will focus on these programs.

1.1.3: Develop and disseminate information on best practice guidelines for recruitment and admissions based on findings from 1.1.1 and 1.1.2, and other sources such as the Council of Graduate Schools and the published literature.

1.1.4: During recruiting activities and orientation, provide information to applicants and matriculants on navigating the financial aid, payroll, and human resource systems at OSU with a special focus on the increased use and effectiveness of the MyOSU Portal system.

1.1.5: Create and distribute recruiting information to programs and units that focus on commonalities: Corvallis and its environs, student support services at OSU, Graduate School processes and procedures, interdisciplinary resources, information on fees, books, printing, parking and the cost of living in Corvallis, among others (see Open Forums Findings Report for more information about this identified need).

1.1.6: Provide support to programs in an effort to enhance their recruitment efforts, such as site visits, visits to campus, recruiting information and online recruiting efforts.

1.1.7: Use central resources to represent OSU's graduate programs at national and international conferences where recruitment of under-represented minorities and international students is a high priority (e.g., SACNAS, ABRCAMS, etc.) and assess effectiveness of these efforts.

1.1.8: Increase support for dual degree options with professional programs, and develop a process for facilitating the transition of high-achieving undergraduates into graduate programs.

Objective 1.2. Increase the efficiency of the application and matriculation process, and improve timely and clear communication with applicants and matriculants

Both faculty and applicants to degree programs have expressed frustrations with the application processes at OSU. To improve the matriculation yield, enhance student satisfaction from day zero, and increase efficiencies, the application and matriculation processes at both university and program levels need to be assessed and revised to meet the needs of faculty and students.

Action Items

1.2.1: Identify and employ software that allows a one-stop application website, including a "progress bar" with estimated time to a decision, and program contacts. All materials for an application, including letters of recommendation and official transcripts, will be submitted and tracked via this site and data will be harvested from the system to populate annual reports back to programs on all aspects of student progress.

1.2.2: Develop mechanisms that allow individual programs to waive application fees if desired in return for compensation to the Graduate School for lost revenue.

Objective 1.3. Provide centralized support for best practices in graduate education and professional development

Currently, approximately a third of our doctoral students and a fourth of our masters students are either not graduating or taking longer than eight years and four years, respectively, to complete their programs. There are multiple causes and impediments to timely completion, and we should address as many as possible to ensure that students are given every opportunity to complete their degrees in a timely and successful manner. Success will require graduate student-specific support to demonstrate the value of the degree, improve the likelihood of persistence, and increase timely completion rates.

Action Items

1.3.1: Provide a template to each program that incorporates common features and best practices regarding support and guidance for graduate student success, including counseling for career options upon graduation.

1.3.2: Develop additional, specific guidelines and dissemination of best practices to programs and units to ensure support for under-represented minorities who often face unique barriers to success.

1.3.3: Provide at least three pedagogical and/or motivational workshops per year to graduate students relevant to all aspects of student progress through and persistence in graduate studies.

1.3.4: Monitor the success of recruitment and retention efforts and provide an annual report to each graduate program.

Objective 1.4. Ensure that student services provided on campus are graduate-student focused and specifically meet the unique needs of graduate students

Most services available to students at OSU aim to serve the overall student population, including both undergraduate and graduate students. Graduate students commonly face different obstacles or needs than undergraduates, especially among under-represented minorities, international students, non-traditional and part-time students, students with

families, and distance education students. Increased efforts are required to gauge and effectively address the particular needs of the diverse community of graduate students.

Action Items
1.4.1: Evaluate the needs of graduate students for specific support services, including specialized career counseling, family and life issues, financial needs, and cultural awareness (particularly for international and first-generation students). Where possible, evaluate and prioritize these needs in relation to students' abilities to complete degrees in a timely manner.

1.4.2: In collaboration with the Division of Student Affairs, develop and enhance support services specific to graduate students and that effectively meet the diverse and unique needs identified in 1.4.1. Ensure that graduate student needs are integrated into student services as standards of practice.

Objective 1.5. Improve mentoring and advising relationships between students and graduate faculty

Studies have shown that the quality of the student and faculty advisor relationship is central to student persistence in graduate programs, timely graduation, and career success. It is also important that graduate students have opportunities to learn quality mentoring skills in preparation for their post-career academic and professional objectives.

Action Items
1.5.1: Institute a mentoring orientation session for all incoming faculty, and require completion of an on-campus or online mentoring training module prior to appointment as graduate faculty, and assess the effectiveness of this effort.

1.5.2: Provide two workshops each year for advisors and students, respectively, on effective mentoring and advising, focusing on the difference between mentoring and advising, and assess the effectiveness of the workshops.

1.5.3: Develop a rubric and online mechanism for student assessment of the quality of faculty mentoring and advising. Ensure that the rubric provides guidelines and informs students about what effective advising/mentoring should look like so that students may truly evaluate the effectiveness of advising/mentoring.

1.5.4: Work with the Provost's Office and Faculty Senate to elevate advising and mentoring of graduate students as specific evaluation items in the promotion and tenure decision and the annual performance evaluation.

1.5.5: Alter the term of appointment to the OSU graduate faculty from indefinite to a five-year, renewable term. Utilize data gathered from 1.5.3, as well as each faculty member's own interest and role in continuing as a graduate faculty member, to assess

faculty for renewal. Work with department/unit/program chairs to decide on reappointments and also to help faculty with advising/mentoring issues.

1.5.6: Explore opportunities for developing mentorship relationships between graduate and undergraduate students in an effort to provide advanced graduate students the opportunity to develop and practice mentoring skills in higher education.

Objective 1.6. Improve communication among the Graduate School, graduate students and graduate faculty

Open Forums with graduate students, sponsored by the Graduate School, provided the opportunity to hear student concerns and revealed the frequency of common misconceptions among the graduate student population. Similarly, graduate faculty familiarity with Graduate Council policies and Graduate School procedures is sometimes incomplete. Communication needs to be improved so that all stakeholders are aware of and have quick access to information on policies, procedures, fees and support services when they need it. Groups of students who are at particular risk for discontinuation need to be targeted for increased intervention and improved success.

Action Items

1.6.1: Restructure and upgrade the Graduate School website to more effectively provide information to prospective and current students and faculty. Include software that allows visible and consistently updated pages and notices on Graduate School policy and procedural changes for both graduate students and faculty.

1.6.2: Assess the utility of the current use of Facebook and the Grad Connections Newsletter to provide news and information to students. Increase or alter information provided through social media outlets based on findings.

1.6.3: Provide a mechanism annually to gather constructive student and faculty feedback, particularly relating to the progress being made through the implementation of this plan.

1.6.4: Identify groups of students based on 1.6.3 and in consultation with program directors and advising services whose needs require particular attention to ensure retention and success. Develop targeted programs to identify at-risk students early and try to improve persistence in the degree program.

1.6.5: Work with the International Programs office to identify the particular informational needs of international students regarding OSU graduate policies and procedures, and develop materials for graduate program directors, faculty and students addressing the international graduate student experience at OSU.

Indicators of Success for Goal 1
1. Increased total number of applicants to OSU's graduate programs that have the capacity to grow their graduate student population

2. Increased overall GPA and GRE scores in the matriculant pool
3. Increased yield of matriculating students from accepted applicants
4. Increased number of matriculants from under-represented minorities
5. Reduction in time from a completed application to a decision by the program
6. Reduction in the net cost of the application/enrollment/matriculation process
7. Improved level of satisfaction expressed by students and faculty with regards to the application and matriculation processes
8. Increased number of students matriculating into dual degree programs
9. By 2014, each program will have a detailed guide for graduate student success
10. The four-year graduation rate for masters students and eight year graduation rates for doctoral students will have increased by 2017
11. The four year graduation rate for masters students and eight year graduation rates for doctoral students will have increased by a similar amount to the above for under-represented minorities (e.g. women in STEM fields, racial minorities)
12. Increased student satisfaction with graduate studies at OSU reflected in a variety of annual feedback mechanisms including the Graduate School's exit surveys
13. Increase in the scope and effectiveness of graduate student-focused services provided on campus
14. Increase in the number of graduate student contacts with student support services
15. Majority of graduate students using student support services rating the quality of services received as good to excellent
16. Increased number of positive assessments by students of faculty mentoring and advising
17. Fewer complaints received by the Graduate School, CAPS, and the Ombuds office regarding student mentoring relationships with major advisors
18. Improved opportunities for graduate students to engage mentoring relationships with undergraduate students
19. Increase in positive responses to questions regarding communication during annual feedback mechanisms (e.g., open forums, online surveys, exit surveys, etc.) from both students and faculty
20. Decrease in the number of inaccurate perceptions by students expressed during annual feedback mechanisms
21. Increased persistence of all students, but particularly those who are at high risk for dropping-out

GOAL 2. Continuously Improve Program Quality

OSU desires to become a top ten land grant university by 2025. To do so, most perceive that we need to grow the graduate student population to 25% of the student body, and to improve national and international awareness and the reputations of our graduate programs. Simultaneously, we need to ensure that the quality of incoming

students, courses, curricula, and mentoring is maintained and continually improved to be successful.

Objective 2.1. Improve the national and international stature and reputation of OSU graduate programs

The Graduate School will work with departments, colleges, and graduate programs to strategically realign graduate degrees around the university's signature areas, thus increasing our opportunities for national and international recognition in areas of excellence in graduate education. Restructuring will likely include coalescence of new or existing graduate degrees into umbrella programs that would house multiple transcript-visible options, but different models for cooperation may also include confederations of existing degrees or new interdisciplinary single degree programs that evolve from the process. Restructuring also means elimination of degree programs that no longer meet student or employer needs. Additionally, we need to ensure that our masters and doctoral degree program graduates are trained for a variety of career options both inside, and more importantly, outside of academia. We need to provide a well-trained workforce for a rapidly-changing future.

Action Items
2.1.1: Survey graduate program directors, department chairs, and college deans to identify disciplines around which we can build umbrella or interdisciplinary graduate programs.

2.1.2: Create task forces around areas of excellence and support creative restructuring efforts and advocacy for faculty release time to pursue Category I proposals when needed.

2.1.3: Support restructuring of degree programs to be responsive to the needs of an expanded list of potential employers in all sectors, including government, industry, and non-governmental organizations as well as academia.

2.1.4: In collaboration with the Research Office, develop incentives for Principal Investigators to balance hiring of graduate students with post-doctoral fellows.

2.1.5: Facilitate conversations among program faculty, students and potential employers to enable degree programs to revise curricula to keep abreast of the evolving skills and training required for newly-emerging career opportunities both inside and outside of academia.

2.1.6: Work with University Relations and Marketing to regularly promote graduate education inside and outside the university.

Objective 2.2. Improve quality assessment of graduate programs

Continuous quality improvement requires the articulation of a comprehensive and consistent set of metrics by which to assess graduate programs. Ideally, these metrics will be used to compare graduate programs across the university, to benchmark improvement internally, and to compare our programs to peers for the purposes of accreditation, program improvement, recruitment and stakeholder investment.

Action Items
2.2.1: The Graduate School will work with the University Assessment Council, the Graduate Council, Institutional Research, and the Academic Programs, Accreditation, and Assessment (APAA) office to develop a set of metrics for consistent comparison of graduate program quality over time (trends) and with our peer institutions. These data should be collected centrally and reported annually to programs. Additionally, these metrics will form the core of the university accreditation data on graduate programs and the self-study for decadal external graduate program reviews. Because programs are diverse, the Graduate School will work with each program to identify any additional program specific metrics that ensure a meaningful reflection of the program trends and comparisons with programs at peer institutions.

2.2.2: Along with the Assessment Council, help graduate programs to develop effective full-cycle assessment programs that align with accreditation and graduate program review needs of the university, and guide them in effective use and reporting of assessment data.

2.2.3: Annually provide training sessions for graduate program directors to discuss on-going assessment needs, reporting requirements, new policies and procedures, dissemination of best practice information, and progress in meeting the goals of this strategic plan.

2.2.4: Every fall term, provide an orientation program for new graduate program directors to provide essential information (hard copy and online) on the management of a graduate program, including OSU Graduate Council rules and policies, best practices, expectations, and support services.

Objective 2.3. Improve the quality and accessibility of graduate courses

To continuously improve the quality of the graduate student experience at OSU, we need to expand the number of stand-alone graduate courses and ensure that they are being taught at regular, predictable and reasonable intervals. Access to stand-alone courses has been articulated by OSU graduate students since the early 1990s as a prime issue. The Graduate Council has focused on this issue on many occasions, but it continues to be one of the top graduate student concerns at decadal program reviews and in open forum discussions.

Action Items
2.3.1: Work with graduate programs, colleges and departments to communicate the value of offering stand-alone graduate courses.

2.3.2: Identify incentives to reduce the number of intermingled undergraduate/graduate (a.k.a. "slash") courses. Advocate for university investment of resources to increase the availability of stand-alone graduate courses and to increase the effectiveness of retained slash courses. Require more extensive justification in the Category II process for the creation of new slash courses, explaining why a stand-alone graduate course is not being proposed in preference to the slash course.

2.3.3: Propose a policy change to the Graduate Council that would decrease the number of slash courses allowed on a graduate program of study from 50% of total credits to 50% of all didactic (non-blanket) courses.

2.3.4: Develop assessment procedures to ensure that remaining slash courses provide effective mechanisms for meeting the rigor and depth of knowledge expected by graduate students. Consult with program directors and department chairs to remedy concerns related to slash courses.

2.3.5: Ensure that graduate courses listed in the catalog are offered regularly and predictably by working with graduate programs on course scheduling, and assess barriers to achieving predictability and regularity in course offerings. Ensure scheduling of all graduate level core courses is completed and visible at least 3 years into the future.

2.3.6: Offer workshops designed to enhance effectiveness of graduate courses both on campus and in Ecampus by working with the Center for Teaching and Learning and collaborating with chairs/deans/directors from programs who have successfully developed effective graduate curricula. Graduate courses need to have the disciplinary depth and rigor appropriate to graduate education, while also allowing for interdisciplinary communication to efficiently use teaching resources and successfully deliver material. Consider the creation of modular course units to address the needs of different populations of graduate students; for example, a preparatory module to introduce interdisciplinary students to a topic or approach, and more advanced units to address the in-depth training required for students in the discipline.

Objective 2.4. Grow the number of graduate faculty and their capacity to train students

To increase the graduate student population at OSU, increase our national and international stature and rankings, and increase the training options for existing students, we need to increase the number of OSU faculty involved in graduate education, and in particular, involvement in Ph.D. training specifically.

Action Items
2.4.1: Contact all tenured and tenure-track faculty who are not currently a graduate faculty member to discuss and assess their capability to advise graduate students. Encourage them to participate in graduate education. If a faculty member is not

interested in becoming a graduate faculty member, determine why and attempt to provide incentives for involvement.

2.4.2: Working with graduate program directors, the Graduate School will contact PhD scientists and scholars in the region who might be qualified to serve as graduate faculty through a courtesy appointment and assess their capability to advise a student. Make special efforts to recruit graduate faculty who are under-represented minorities. Provide direct support efforts to ensure that off-campus graduate faculty have the information, tools, skills and university support necessary to perform well as a graduate advisor.

Objective 2.5. Improve and enhance transdisciplinary and interdisciplinary opportunities in graduate education

To stay current, relevant and attractive to prospective students and employers, graduate degree programs need to continuously evolve to encompass emerging disciplines, anticipate skills needed by a future employer, and enable the creation of new knowledge at the boundaries of disciplinary fields. Many perceive OSU to have relatively low barriers to interdisciplinary and transdisciplinary collaborations, and we consider this a strength to be celebrated and supported. However, participation in degree programs outside of one's departmental home are sometimes perceived to have "less value" to a faculty member's career advancement and to the base budget of the home department. In concert with OSU's Research Agenda, we need to foster policies and incentives that promote faculty involvement in transdisciplinary and interdisciplinary research and graduate training opportunities. Appendix 6 outlines a draft proposal to facilitate tracking and valuing of the contributions of faculty to interdisciplinary programs.

Action Items
2.5.1: Support opportunities for new transdisciplinary and interdisciplinary collaborations for graduate students by rewarding the contributions of faculty to existing and new interdisciplinary and transdisciplinary programs (see Appendix 6 for draft proposal for accounting of interdisciplinary efforts). Work with the Office of Budget and Fiscal Planning to develop new funding models for interdisciplinary programs.

2.5.2: Work with the Academic Programs, Assessment and Accreditation office (and perhaps the Oregon University System) to streamline the creation of new transdisciplinary and interdisciplinary graduate programs on a trial basis. We suggest a six year trial period before formal Category I applications are required or a decision to terminate is made.

2.5.3: In collaboration with the Research Office, sponsor workshops to facilitate idea development and support proposal writing for new NSF IGERT programs and other interdisciplinary training grants.

2.5.4: Explore potential funding sources, possibly from the private sector, to support new interdisciplinary and transdisciplinary graduate programs including "IGERT-like" programs.

Objective 2.6. Increase the number of joint degree graduate programs within OSU and with other institutions

To expand opportunities for our students while simultaneously maximizing efficient use of resources, we need to facilitate the completion of agreements to expand joint degree offerings and shared degree programs with both domestic and international institutions.

<u>Action Items</u>

2.6.1: In collaboration with the Office of International Programs, the Academic Programs, Assessment and Accreditation office, and ultimately, the Oregon University System, develop a process for approval of new joint international and joint domestic degree programs, including programs with other State of Oregon Institutions (e.g. OHSU).

2.6.2: Develop a co-terminal degree program for high achieving undergraduates who as seniors can begin graduate coursework and thesis planning that is applied toward a master's degree.

2.6.3: In collaboration with the Office of International Programs and the Office of Academic Programs, develop opportunities and funding support for domestic students to receive international graduate education/research experiences abroad, and for international students to receive graduate education/research experiences at OSU.

Indicators of Success for Goal 2
1. Increase in OSU's scores on the NRC criteria for rankings of graduate programs (see Appendix 5)
2. Increased satisfaction and employment-in-their-field of masters and doctoral alumni
3. Development of effective full-cycle assessment programs, and implementation of changes to achieve improvement based on assessment results
4. Development and use of consistent metrics for meaningful comparisons with peer institutions
5. Improvements in quality and delivery of internal program metrics over a five-year time span
6. Decreased number of slash courses offered
7. Increased number of stand-alone graduate courses offered at the 500 and 600 level
8. Reduced complaints regarding slash courses during annual graduate student feedback mechanisms
9. Reduced complaints regarding the predictably of graduate course offerings during annual graduate student feedback mechanisms
10. Increase in the percentage of the total student body that is graduate students
11. Increase in the number of graduate faculty qualified to advise doctoral and masters students
12. Improvement in student assessment of faculty mentoring and advising
13. Increased number of interdisciplinary and transdisciplinary graduate programs
14. Increased enrollment in and graduation from interdisciplinary degree programs
15. Increased faculty participation in interdisciplinary programs

16. More IGERT and "IGERT-like" proposals submitted and funded, with a goal of being awarded up to one per year for the next three years, and then an additional three programs in the following two years
17. Increase in number of students and faculty involved in international research and educational experiences
18. Increase in student access to domestic institutions with unique facilities (e.g. the Pacific Northwest National Laboratory) to enhance specific training and internship opportunities
19. Increase in the number of joint and dual degree programs within OSU and with other institutions in the region and internationally
20. Establishment of a co-terminal degree program for selected graduate programs

GOAL 3: Grow and Invest Resources to Enhance Graduate Education Opportunities

Attracting students, providing them with an opportunity to succeed, and ensuring a reasonable time to degree completion are all at least partially contingent on financial support for graduate students at OSU. Strategic allocation of financial resources will help us to grow enrollment, provide support for students and deliver value-added opportunities that enable the long term success of our alumni.

Objective 3.1. Create new or restructured graduate programs where there is capacity

Several colleges have small, few or no graduate programs (especially doctoral programs), but with modest investments in faculty lines, could develop viable and strong graduate programs or improve existing programs.

Action Items
3.1.1: Consult with the College of Liberal Arts and the College of Business to explore the possibilities of developing new graduate programs with a focus on doctoral program development, and support efforts as needed.

3.1.2: Explore the restructuring of existing programs or development of new programs that contribute to our signature areas of excellence in other colleges as well (see Objective 2.1).

Objective 3.2. Create endowments for graduate fellowships

In order to achieve parity with our peer institutions, we must meet the goal of having greater than 70% of all international and domestic doctoral students supported on an assistantship or fellowship, and to do this, we will need to increase fellowship opportunities.

Action Items

3.2.1: Establish a greater number of OSU Graduate Fellowships by working with the OSU Foundation and the academic deans to identify private and industry donors and by raising the priority of graduate student funding at the college and university levels.

Objective 3.3. Incentivize assistantship opportunities for graduate students

The undergraduate enrollment at OSU increased by 5.4% during the 2010-11 academic year, and is predicted to increase by 2-3% per year in the near future. The number of graduate teaching assistantships (GTAs) did not increase proportionately even though GTAs can facilitate success of undergraduate students. Increasing the number of GTA positions is not only an effective means to financially support increased numbers of graduate students, but they also support undergraduate student access and success. To this end, we encourage colleges and departments to invest in GTA positions in relation to the number of undergraduates in their college/department, thereby increasing the quality of graduate education and financial support for graduate students.

Further, the number of postdoctoral positions has been increasing 5% per year while the number of GRA positions has increased only 1% per year. As the research agenda grows its efforts in three strategic areas (see http://oregonstate.edu/research/research-agenda.html) and increases its involvement in commercialization, graduate training should be a key part of that effort. We need to rebalance the growth in postdoctoral positions and GRA positions to provide more support for graduate students.

Increasing the number of GRA and GTA positions is essential for OSU to remain competitive in graduate education. Many of our aspirational peers (see Appendix 2) are funding approximately 70% or more of their graduate students with an assistantship or fellowship. Twelve-month 0.49 FTE salaries at peer institutions range, on average, from $20,000 - $35,000 + per year. We need to remain competitive with our peers and attract the best and the brightest students to our campus, so increasing the number of assistantships and ensuring that salaries are competitive is a high priority.

Action Items
3.3.1: Provide training and incentives for expanded GTA positions to ensure that increases in GTA positions follow increases in undergraduate enrollment in each college. Work to identify those undergraduate programs targeted for increases in enrollment, and work with college deans to encourage them to invest in GTA positions to meet the needs of the undergraduate program while also improving and investing in graduate education.

3.3.2: Finalize development of a Certificate in University Teaching that will provide an 18-credit opportunity for advanced training in university teaching in an effort to provide a high level of training for those students planning a career in academia.

3.3.3: In collaboration with the Center for Teaching and Learning, develop workshops that provide training for new GTAs.

3.3.4: Work with programs to ensure that GTA positions available within departments, but not filled within departments, are advertised broadly.

3.3.5: Incentivize the hiring of graduate research assistants (GRAs) by allocating a limited number of tuition remissions to GRAs based on university research agenda and strategic enrollment goals.

Objective 3.4. Assess and revise GRA/GTA salaries and allocation across and within colleges and programs

The issue of inequities in terms of salary and expected effort among GTA positions across colleges and departments is a perennial issue with graduate students. Some of the salary differentials occur due to market factors that are beyond the control of the university or graduate programs. Nevertheless, efforts should be made to advocate for reductions in salary inequities where possible and investigate the re-allocation of resources to improve access to the baccalaureate core and other areas where demand is high.

Action Items
3.4.1: Conduct a comprehensive assessment of current GTA salaries across colleges, investigate gross salary inequities and recommend revisions as appropriate. In particular, in situations where GTAs from two different departments are being paid different wages for the same work (e.g. serving in the same course), efforts need to be made to correct the differential.

3.4.2: Assess the allocation of GTA positions across programs and advocate for revisions or additional resources to ensure that the number of GTA positions within a program is sufficient to support undergraduate classroom instruction needs. Encourage departments to invest in GTA positions where higher undergraduate classroom demand is present.

3.4.3: Assess the number of fellowship and scholarship awardees by graduate program and determine the reasons for any inequities in awards among programs. If a fellowship or scholarship program is not meeting an adequate return on investment, or disadvantages applicants in one program relative to another, then we will revise the nomination and application guidelines to ensure that students from all programs can compete fairly for available resources.

Objective 3.5. Increase the number of GTAs funded by Ecampus revenue

Ecampus undergraduate course offerings and degree programs are growing at a rapid rate. To meet the need for instruction of these courses, graduate students can be employed as GTAs. Students may be trained in online learning techniques through Ecampus trainings, CTL trainings or by earning a Certificate in University Teaching focused on online learning and instruction methods.

Action Items

3.5.1: Identify areas for growth in undergraduate and graduate Ecampus programs by working with academic units and Ecampus. Where undergraduate courses are offered online, consider opening courses with capped enrollment and obvious demand and use the additional revenue to support necessary additional GTA positions. We will encourage units to invest in GTAs to both enable undergraduate learning and to provide experience for graduate students in online instruction.

3.5.2: Provide training opportunities for GTAs in online instructional techniques in collaboration with the CTL.

Objective 3.6. Target centrally-administered fellowships, scholarships and other resources to support the goals of this strategic plan

Fellowships, scholarships, and other financial resources are critical to graduate student funding and success, and are also prime pathways for helping to meet the goals and objectives of this plan and the university's mission. We recommend ongoing assessment and subsequent revisions to fellowships, scholarships and other financial resource programs as a means to achieving Graduate School and university targets.

Action Items

3.6.1: Re-evaluate the fellowships, scholarships, and other financial resources provided to students on campus to assess the return on our investment in achieving the goals and objectives outlined in this plan, and to re-invest strategically with priority given to the following:

- Programs in one of the signature areas of excellence identified in the OSU strategic plan
- Programs demonstrating excellence in all aspects of graduate education
- Programs which are implementing a plan to improve program effectiveness.

3.6.2: Annually assess whether scholarship and fellowship awards are meeting enrollment, diversity, retention, and completion goals, and revise guidelines iteratively as needed to improve selection procedures and achieve goals.

Indicators of Success for Goal 3
1. Increased number of graduate students
2. Addition of new graduate programs in Colleges of Business and Liberal Arts
3. Increase in total dollars raised per year in support of graduate fellowships, scholarships, and other forms of support for our graduate students within the Graduate School and among colleges
4. Increase in number of graduate students recruited to serve as GRAs on research projects addressing the OSU Research Agenda
5. Increase in the number of GTA FTE within each college proportional to the number of undergraduates

6. Assessment of the relevance and effectiveness of the Certificate in University Teaching and other teaching workshops for employment success through Graduate School exit surveys and alumni surveys
7. Improved GRA/GTA salary competitiveness and equity across programs
8. Increased number of graduate scholarship and fellowship awardees
9. Increased number of GTAs assigned to Ecampus courses.
10. Number of students completing the optional Certificate in University Teaching each year
11. Improvement in achieving goals articulated for each scholarship and fellowship program

Conclusion

The 5-year agenda outlined herein will directly contribute to the advancement of excellence and innovation in graduate education at Oregon State University, while also supporting university enrollment goals and serving as a primary contributor to OSU's three signature areas and the university's mission. The success of this plan relies on collaborative efforts between university administrative offices, programs, faculty and students alike. It is our belief that through partnerships and forward-thinking principles, this agenda serves as a strong foundation for positioning OSU as leader in graduate training in the U.S. and globally, while also pioneering new approaches to graduate training and cultivating a quality experience for graduate students during their tenure in the OSU community.

Appendix 1. The Planning Process

The planning effort was led by a 16-member committee representing many academic programs and administrative offices to guide the development of this plan:

Barbara Bond, Director of Postdoctoral Programs, Graduate School
Bella Bose, Associate Director, School of Electrical Engineering and Computer Science
Jim Coakley, Associate Dean, College of Business
Tracy Daugherty, Distinguished Professor, English
Dan Edge, Head, Department of Fisheries and Wildlife
Courtney Everson, Doctoral Candidate, Applied Medical Anthropology, Graduate Research Assistant for the Graduate School
Theresa Filtz, Associate Professor, Pharmacy, and Co-Chair of the Planning Committee
Kevin Gable, Professor, Chemistry
Rich Holdren, Associate Vice President, Research Office
Sunil Khanna, Associate Provost for International Programs
David King, Associate Provost, Outreach and Engagement
Brenda McComb, Dean, Graduate School, and Co-Chair of the Planning Committee
Lisa Templeton, Executive Director, Extended Campus
Becky Warner, Senior Vice Provost, Academic Affairs
Jessica White, Assistant Director for Co-Curricular Learning, Center for Teaching and Learning
Tom Wolpert, Professor, Botany and Plant Pathology

The committee was co-chaired by Theresa Filtz and Brenda McComb and we relied heavily on information and contributions from Courtney Everson. Courtney also facilitated in-person open forums and online mechanisms to seek input from students as well as direct involvement in drafting this plan. The ideas generated from the committee and the student contributions were summarized and structured to form the goals and objectives of this plan. See Appendix 2 for a list of our peer institutions used in this planning process and Appendix 3 for select internal metrics data used as the basis for identifying issues and generating approaches, provided by Institutional Research and compiled by Courtney Everson.

Unless otherwise indicated, the action items herein are assumed to be the responsibility of the Graduate School to implement over the next five years.

This planning process began in Fall 2011 with the formation of the planning committee who agreed to assist with the development of this strategic plan. This committee represents faculty at multiple levels in their university careers and across disciplines, graduate programs and colleges. The committee was selected due to the diversity of expertise each brought to the table and their demonstrated commitment to and experience with excellence in graduate education. The committee met four times during the fall and winter terms, and subsequently, developed three core themes for improving the graduate student experience, advancing high-quality graduate education, and meeting enrollment goals:
1. Student Recruitment, Retention and Support

2. Ensuring Program Excellence
3. Growing Opportunities for Financial Support

Three sub-committees of the planning committee were then organized around the identified core themes. Each sub-committee met through fall and winter terms, and drafted their ideas and approaches to addressing each of these core themes by identifying specific goals, tactics to achieve the goals, and metrics to measure success toward achievement of goals. Following receipt of sub-committee drafts, Brenda McComb, Courtney Everson and Theresa Filtz worked to write a cohesive, final draft plan. This draft plan then went through a targeted, soft launch process with key individuals and entities to receive feedback and recommendations for revision. The following individuals and entities were included in this targeted, soft launch process: the planning committee, the Graduate School leadership team, the Graduate Council, and the Research Office. The final plan was delivered to Sabah Randhawa, Provost and Executive Vice President of OSU, for review and approval. The final plan was made publically available in Spring 2012, and the five-year starting mark for this plan was summer term 2012.

At the heart of the planning process was the need for accurate, up-to-date internal metrics for OSU as well as external data and best practices from peer institutions (see Appendix 2 for list of peers) and the published literature. The planning committee developed a list of requested internal and external metrics and best practices, and requests were fulfilled by Courtney Everson in collaboration with Institutional Research and Sal Castillo. Select internal metrics are included in Appendix 3. The data gathered allowed the planning committee to make evidence-based decisions regarding the 5-year agenda and future of graduate education at OSU, while also helping to ensure that the 5-year plan aligns with emerging best practices and trends in graduate education at a national level. Specifically, data allowed the planning committee to: 1) identify areas of current strength and those in need of improvement; 2) prioritize issues and organize into priority goals for this strategic plan; 3) analyze how OSU compares to peer institutions; 4) develop best practices to ensure the competitiveness and innovativeness of graduate education at OSU; and 5) identify gaps in the current data collection systems at OSU, which constitutes a priority need for insuring compliance, accreditation, and continued graduate education excellence.

In addition to the data and metrics provided to the planning committee, Courtney Everson worked collaboratively with key graduate student leaders to solicit ideas and concerns from the OSU graduate student body via four facilitated in-person open forums on the OSU campus, as well as through an online interface designed to engage students not located in Corvallis or otherwise unable to make on-campus sessions. The student leaders working with Courtney on this initiative were:

Angela Baxter, MAIS Student, Director of Graduate Affairs for ASOSU
Ashley Bromley, Masters Student, Vice President of Organizing for CGE
Dennis Dugan, Masters of Public Policy Student, GTA for Team Liberation
Harmony Burright, Masters Student, President of OSU Chapter of MBB

Kim Ogren, Masters Student, Member of OSU Chapter of MBB
Miriah Russo, PhD Student, Vice President of OSU Chapter of MBB

In total, 171 students contributed ideas to us through these forums. Their input fell into three broad thematic categories:
1. Graduate Student Experiences, Quality of Life & Support Systems
2. Academic Programs & Quality of Education
3. Graduate School Costs, Funding & Employment.

The student-identified themes corresponded broadly with the themes identified by the planning committee. While specific issues raised by the students provided additional insight from the student perspective, the emerging ideas remained complementary to those addressed by the planning committee. Student ideas generated were incorporated into the themes addressed by the planning committee to the degree possible. Some comments and suggestions made by students were better handled more immediately by the Graduate School outside of the planning process, and some simply required additional communication to correct erroneous perceptions by students. A full findings report from this open forums project can be located here: http://oregonstate.edu/dept/grad_school/openforums/OpenForums_FinalReport_Feb12.pdf

Appendix 2. Peer Institutions for the purposes of this planning process

For purposes of providing background in this document and our strategic planning purposes, the Provost and Dean have settled on the following list of aspirational peer institutions.

Cornell University
Michigan State University
Ohio State University
Pennsylvania State University
Texas A&M University
University of Arizona
University of California, Davis
University of Illinois, Urbana-Champaign
University of Wisconsin, Madison
North Carolina State University

Appendix 3.   Select Internal Metrics used in the planning process.

Metric	SUMMARY ANSWER
Student & Program Characteristics (** indicates this is a NRC Criterion)	
Graduate students enrolled in Fall term by year	Fall 2011: 3001 graduate students; 775 non-degree seeking students; 580 first professional (total: 4356)
Graduate students enrolled in Fall term by degree	Fall 2011: 1693 for Master's; 1308 for Doctorate; 775 for Non-degree grad; 580 For First Professional
Proportion of the total student body who are graduate and professional school students	Fall 2011: 14.34% (3581 total grads/professional, excluding non-degree seeking students; 24,977 total student body)
Proportion of graduate students and first professional students from underrepresented groups (racial and gender diversity)**	Fall 2011: 50.16% women* (all fields, grad & first prof combined; 47.04% women for grad only, 68.10% women for first prof only) 15.24% racial minorities* (all fields, grad & first prof combined; 13.24% racial minorities for grad only, 28.28% for first prof only) *Note: non-degree seeking grad students are included, based on 4356 total grads and first profs
Proportion of international graduate and first professional students**	Fall 2011: 19.67% total* (all fields, grad & first prof combined; 22.25% for grads only, 2.93% for first prof only) Note: non-degree seeking grad students are included, based on 4356 total grads & first profs
Masters, Doctorates, and First Professional Graduates per year**	2010 - 2011: 745 Master's, 174 Doctorates, 141 First Professional
Percentage of students completing Master's and PhD degrees**	62% 8-year graduation rate for PhD (Avg. over F1996 to F2003 cohort) 76% 4-year graduation rate for Master's (Avg. over F1996 to F2007 cohort)
Average time to degree completion (Master's and PhD)**	8 years for PhD; 4 years for Master's
Proportion of graduate students on GTA and GRA**	56.95% (855 GTAs, 854 GRAs; Percentage based on graduate student total of 3001 for Fall 2011)
Proportion of graduate students on fellowships**	3.33% (100 students on fellowship; Percentage based on graduate student total of 3001 for Fall 2011)
PhD Student : Faculty Ratio**	1:1
Student Credit Hours (SCH) generated in graduate courses per year	Total: 129,791/year (Fall 2010: 44,656, Winter 2011: 43,337; Spring 2011: 41,798)
Faculty Characteristics (** indicates this is a NRC Criterion)	
Graduate Faculty FTE	Fall 2011: 1108.4 grad faculty FTE (those approved to teach grad courses *or* direct grad theses/dissertations)
Graduate courses taught per year per	Fall 2011: 2.4 average grad faculty courses taught per grad

graduate faculty member	faculty member (including theses and blanketed number courses)
Number of graduate faculty involved in interdisciplinary programs/degrees**	50.41% approved to direct in established interdisciplinary programs (551 interdisciplinary approved out of 1093 total approved to direct) 23.33% approved to direct in two or more disciplines, excluding established interdisciplinary programs above (255 approved in 2 or more out of 1093 total approved to direct)
Number of graduate faculty from underrepresented groups (racial and gender diversity)**	Fall 2011*: 35% women; 13.85% racial minority *Note: based on total of 1220 grad faculty approved to *either* teach or direct

Oregon State & National Underrepresented Groups Composition (Gender & Racial Minority) – 2010 Data

METRIC	US	Oregon	OSU Graduate Students
Population	308,745,538	3,831,074	4,356
Gender			
Female	50.80%	50.50%	50.16%
Male	49.20%	49.50%	49.84%
Race			
White persons	72.40%	83.60%	59.11%
Black persons	12.60%	1.80%	1.24%
American Indian and Alaska Native	0.90%	1.40%	0.85%
Asian/Pacific Islander	5.00%	4.00%	6.04%
Persons reporting two or more races	2.90%	3.80%	2.59%
Persons of Hispanic of Latino origin	16.30%	11.70%	4.52%
International	ND	ND	19.67%
Declined/missing	ND	ND	5.98%

Appendix 4. Enrollment Plan

OSU Graduate enrollment: growing toward the 25% goal

Fall 2011 Graduate Students (from IR)
- Over 5600 applications
- 3776 graduate students (15.1% of all OSU students)
    - 1790 women, 1986 men
    - 134 U.S. Minorities (3.5% of Graduate students)
- And an additional 580 Professional students (2.3% of all OSU students)
- 857 International Graduate Students (15.3% of Graduate Students)
- 142 INTO Graduate Pathway students
- 235 Graduate students took courses only through Ecampus
- 124 graduate students at the Cascades Campus

Issues
- Post doc numbers increasing @ 5% / yr. Doctoral students increasing @ 1% / yr.
- Some programs have capacity for growth, some do not;
- New programs and new degrees can be developed; on campus and Ecampus
- Fellowship support is a significant recruiting tool; but we need to recruit
- International student applications = 2500/year; a small proportion are accepted.
- Many extension faculty and some other T/TT faculty off campus are not advising graduate students

Proposed Strategies
- ***Waiver of Tuition on full indirect return research grants***
    - Incentivize faculty to include students on grants
    - Cost of ~$5 million per year; potentially offset by increased grants
- ***Create endowments for Graduate Fellowships***
    - Work with you to bring funds to the Foundation
    - Each Fellowship requires a $750,000 endowment
    - Provosts Distinguished Fellowship recruiting; allocate all funds this year
- Focus efforts on Recruiting, Retention and Assessment
    - Full cycle assessment of the Graduate Student Experience
- Facilitate ***development of new programs,*** e.g.
    - PhD Public Policy
    - MA in Women Studies
    - Masters of Business Admin and Accounting
    - Certificate in University Teaching
- ***Ecampus Graduate Programs*** – potential to add 300-400 more students
- Engaging unengaged faculty as student advisers: Extension, Cascades, Exp. Stns
- International Admissions
    - Pathway programs
    - Revise TOEFL and IELTS to be program specific

- o Joint and Dual degree programs
- Supporting new faculty: recruiting and mentoring workshops
- Increase GTA appointments proportional to undergraduate enrollment increases.

Appendix 5. The primary NRC criteria determining rankings

1.   Number of PhD students graduated
2.   Ph.D./Faculty ratio
3.   Percentage of students completing Ph.D. degree
4.   Time to degree
5.   Financial support
6.   Full financial support
7.   Fellowship
8.   GRE
9.   Publication
10.   Publication per faculty
11.   Number of citations per publication
12.   Grant
13.   Racial and gender diversity
14.   Gender diversity
15.   International students
16.   Involvement with interdisciplinary work
17.   Placement
18.   Perception by peers

Appendix 6.   Accounting of interdisciplinary efforts.

Interdepartmental graduate programs at OSU are growing in number and in enrollment. Such cross-cutting, often trans-disciplinary programs take advantage of the expertise residing in multiple administrative units to enhance the educational opportunities for students. Because of the hierarchical nature of universities, departments are distinct administrative units that receive funding and other forms of support to allow undergraduate and graduate programs to flourish. But graduate programs are not always cleanly aligned with departments, especially in the case of interdepartmental programs. Many Department Heads are concerned that the contributions made by their faculty and their departmental resources to interdepartmental programs are not fully accounted for during annual or periodic assessments of their department's success. We provide an accounting mechanism that ensures that departments receive appropriate credit for contribution to multiple graduate programs while also ensuring that graduate programs can be effectively assessed during graduate program reviews.

To facilitate the accounting it is important to recognize that graduate programs are distinct from departments even when the department is the administrative home for a graduate program. Graduate Faculty in a program can come from a number of different administrative units on campus. Hence the issue of accounting for people, money and time separately by department and by graduate program is important even for graduate programs housed within a department.

We provide an example of such accounting using hypothetical data for student head count in Environmental Sciences Graduate Program (table 1). The home department of the adviser of each graduate student is used to align that student with an academic unit. Similar matrices can be formed for faculty FTE devoted to teaching courses to students in various programs based on SCH's taken by students in each Graduate Program. Another table could be developed for square foot office or lab space or other departmental resources allocated to students in each graduate program.

Table 1. A HYPOTHETICAL EXAMPLE of the home department of graduate student advisers used to align graduate students among various graduate programs.

Graduate Programs	Departments					
	Zoology	BPP	F&W	Geosciences	FES	Total
Env. Science	20	15	15	12	6	62
Zoology	45	0	1	1	0	47
BPP	0	45	0	0	1	46
Fisheries	0	0	30	1	0	31
Wildlife	0	0	45	1	6	52
FES	0	0	2	2	52	56
Other ID programs	12	3	8	25	11	59
Total	77	63	93	42	76	

These matrices can be used to demonstrate departmental success and commitment more fully, and also used to illustrate the effectiveness of graduate programs in cutting across administrative boundaries. For instance without such an approach, an analysis of the Zoology graduate students would reflect only 45 students enrolled, while accounting for contributions to interdisciplinary programs would ensure that the full 77 students were reflected in their departmental assessments. Similarly a Graduate Program Review of Zoology would reflect 47, not 45 students if several graduate faculty in Zoology were in other academic departments, and a graduate program review for Environmental Sciences would include all 62 students advised by faculty from 5 departments.

Development of these matrices annually, with separate accounting of current students and graduates, would allow monitoring of trends in both departmental and graduate program contributions to graduate education at OSU. Should financial or space resource allocation need to consider students who are members of interdisciplinary programs then a more complete accounting of departmental contributions is possible.