

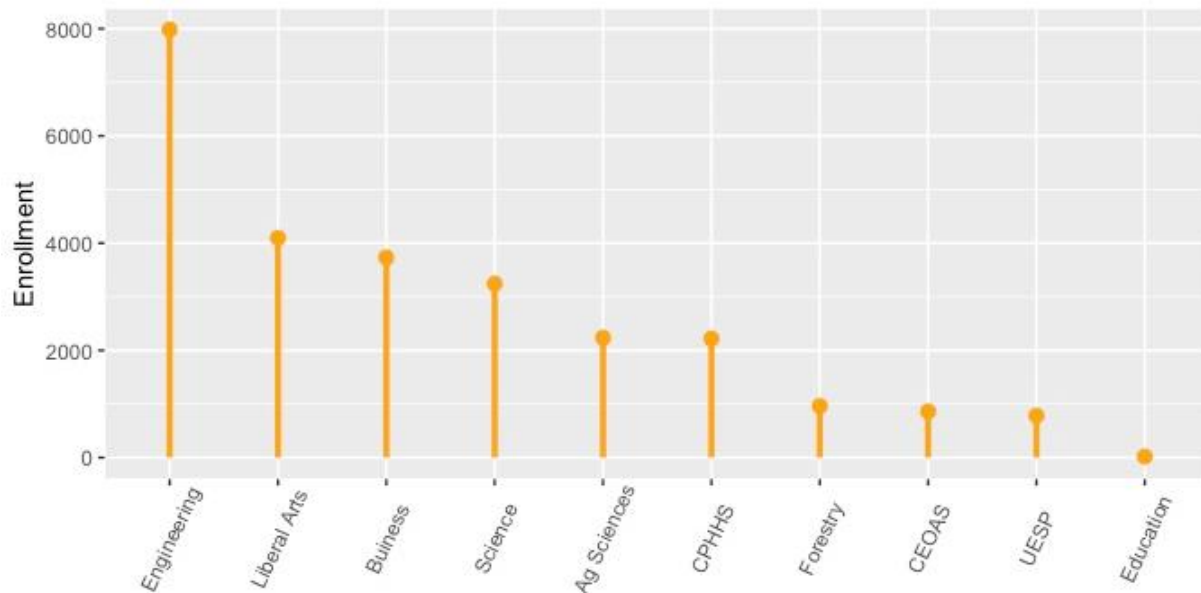
Educational Programs Briefing

This briefing summarizes the university’s approach to undergraduate and graduate education; describes the programs and initiatives aimed at delivering a high quality, globally relevant, and affordable education at the undergraduate and graduate levels; and discusses education-related opportunities and threats facing the university.

UNDERGRADUATE EDUCATION

BACKGROUND

Fall 2019 undergraduate enrollment at Oregon State was 26,247, with students choosing from 93 majors in nine colleges (plus the University Exploratory Studies Program, UESP), across various locations and modalities (face-to-face, Ecampus, hybrid). Figure 1 shows fall 2019 undergraduate enrollment numbers by college. At the undergraduate level, almost all of OSU’s programs are delivered face-to-face in Corvallis. Thirty programs are delivered through Ecampus, nineteen at OSU-Cascades, and three in Portland.



Source: Core Data Report IRM0309

Figure 1. Fall 2019 Undergraduate Enrollments by College

The university endeavors to provide a transformative education accessible to all learners, and is working on several fronts to become more deliberate in planning how and where the portfolio of academic programs evolves, as well as how students are engaged in leveraging their academic training and experiences into marketable skills and qualifications for jobs or graduate education.

PROGRESS ON STRATEGIC METRICS

The university attained its highest ever first-year retention rate in fall 2019, 85.4%. Both this rate and the six-year graduation rate are slowly increasing. There is still work to do in this arena and in closing gaps in retention among different demographic groups. First-year retention and six-year graduation rates for students of color lag those for white students, and the same is true for students with higher financial need versus those with low need (Table 1).

Table 1. First-year retention (fall 2017 to fall 2018) and Six-year graduation rates. *Students of color include African-American, Native American, Hispanic, Hawaiian/Pacific Islander.

Student Population	First-year Retention	Six-year Graduation
Overall	85.4%	67.1%
Students of Color*	80.0%	56.5%
Non-SOC	86.2%	68.5%
Pell	79.6%	59.6%
Non-Pell	87.2%	71.2%

ON-GOING INITIATIVES AND PROJECTS

New Academic Program Proposals

The Office of Undergraduate Education (OUE) has fully implemented an early alert process for new academic program proposals. In this process, the academic deans are made aware of new programs being proposed and are able to comment, raise concerns or suggest opportunities for collaboration early in the academic proposal process. Similarly, these early notices go to the Statewide Provosts Council for review and comment at the beginning of proposal development. This process will help to strengthen offerings through collaborations both within and outside of OSU, and should speed up the process of bringing new programs to fruition.

OUE launched a new curriculum management system (CIM) in fall 2019, and most indications are of a successful launch of an intuitive and easy to use system. In the long term, CIM will improve our archival and reporting of all curriculum changes. The Office of Academic Programs and Assessment, a unit of OUE, now provides market research support for faculty who are considering new program development.

Academic Program Planning

OUE is leading the university's initiative to create academic program plans (APP) for each academic college and for OSU-Cascades. This process will help expedite new program proposals and position program offerings to align with SP4.0 aspirations — innovation in inclusion and collaboration; revolutionary earth systems science; leading in health and wellness; and advancing economic prosperity and social progress. The APPs will ensure academic program alignment among university and faculty leaders on the general direction of program development at both OSU campuses and across the academic colleges.

Each APP will describe, in a 3-5 year rolling time frame, all new academic programs units aspire to offer and those that are slated for suspension or termination. APPs will be based on evidence satisfying the following criteria: alignment with unit and university mission and goals; potential for academic excellence and distinctiveness; student demand; workforce needs; financial viability; and faculty involvement and support.

OSU-Cascades drafted the first APP, which is undergoing revision following engagement with deans and other university leaders. The academic colleges will develop APPs in the coming academic year.

Stand-alone Certificates

In order to address emerging learner interest in building knowledge and skills in topics and fields that do not require the level of breadth and depth of a major, the university is developing a new degree type — a stand-alone undergraduate certificate. This degree type is on track to be approved by the Faculty Senate in spring 2020.

Currently, undergraduate certificates are only offered concurrently with a bachelor's degree or as a post-baccalaureate credential. The new stand-alone certificate will be available to students who do not want to pursue (or have not yet pursued) a full bachelor's degree, but for whom specific instances of such a certificate could contribute to the coursework for a full bachelor's degree. Students who wish to pursue a stand-alone certificate must meet the normal requirements for admission to the university. Certificates will involve a maximum of 27 credits, and since students may be expected to complete some 300- and 400-level courses as part of this degree type, they will be provided a disclaimer about pursuing the certificate without also completing Baccalaureate Core requirements that might better prepare them for upper division coursework.

An expedited process by which programs with existing concurrent or post-baccalaureate certificates can add the stand-alone pathway will be developed. With this in place, it is anticipated that some stand-alone certificates (e.g., Cybersecurity) may be ready to enroll students as soon as fall 2020.

In the last year, the university has added a B.S. in Business Analytics and a B.S. in Biological Data Science to its portfolio of programs. Work is underway in the colleges of Science and Engineering to develop a general undergraduate certificate in data science. The certificate will be accessible to students from many different majors and will include general courses in statistics, data management, programming, and data ethics, and it will culminate with a major-specific capstone data project. Development on the coursework for the certificate will likely continue into next academic year, with the goal to launch the credential in 2021.

Baccalaureate Core

In fall 2019, the Faculty Senate held several faculty, staff, and student listening sessions about the Baccalaureate Core (BC). They also dedicated time at a meeting of the full Senate to discuss the BC, and invited input from all campus stakeholders. From all of this information gathering, several key theme emerged:

- Many students view the BC as a checklist of courses they have to complete, rather than a comprehensive general education program serving a clear purpose for them.
- Because of this view of the BC as a checklist, many students select courses based upon meeting time, perceived ease, low or no textbook costs, etc.
- The BC poses real difficulties and setbacks for transfer students when courses they take at community colleges do not fulfill BC requirements as expected.
- The BC has now become so large (51 credits in all) that students in some engineering majors are very limited in their choice of courses due to the stringent requirements in their majors.
- The BC has become somewhat poorly focused. The Faculty Senate Baccalaureate Core Committee typically reviews and approves *courses*, but it doesn't have the time or the dedicated focus to consider the BC as a whole.

Following these findings, the Faculty Senate has appointed a work group to investigate general education programs across the country and return with options for OSU faculty to consider. Major changes to the BC could have significant implications for faculty in the colleges of Science and Liberal Arts, in particular, where the majority of BC courses are taught. Therefore, deliberations will need to be careful and deliberate.

High Impact Practices

Experiential learning, research experiences, internships, leadership training, education abroad, and service learning are all considered high impact activities for undergraduate students. Oregon State sees substantially higher first-year retention rates for students who participate in one or more of these activities in their first year, and substantially higher six-year graduation rates for students who participate in one or more of these activities. A record number of students (247) applied for research funding this year through the Office of Undergraduate Research.

One of several Undergraduate Student Success Initiative subcommittees is looking at experiential and research-based learning at OSU, and there will continue to be a push for every undergraduate student to have access to at least one of these high impact activities during their time at OSU. Leaders will be looking to find creative ways to offer all students access to these activities.

Center for Teaching and Learning

The reinvigorated Center for Teaching and Learning (CTL) offers faculty development in eight core areas — course design, assessment, inclusive teaching, instructional methods, blended learning, portfolios and peer observations, scholarship on teaching and learning, and work-life balance. For ease of access, the CTL offers programming and materials in several different formats ranging from a year-long program for faculty who are in their first one to three years at the university, to individual consultations, to “sparkshops,” which are 15-minute facilitated

sessions for small groups. Additional programming will come online this spring, including a series of speaker luncheons, small informal gatherings for faculty around structured topics, and faculty learning communities.

NEW INITIATIVES AND PROJECTS

New activities in support of undergraduates and undergraduate academic programs will continue to be driven by specific SP4.0 actions:

1. Provide distinctive curricula and support innovative pedagogy to advance our mission and vision.
2. Increase experiential learning opportunities and ensure access.
3. Expand pathways to an OSU credential.
4. Increase our retention and graduation of all students.
5. Integrate inclusive excellence principles and practices into all aspects of the university.

Accelerated Credit Program Development

Oregon State and University of Oregon (UO) remain the only two public higher education institutions in the state that are not offering accelerated credit programs, though UO has a program in development. In the next year, OSU will investigate how to enter this space. Using the Ecampus platform, OSU has an opportunity to partner with high school teachers in rural districts in Oregon where accelerated credit may not currently be an option. This approach would fall under the sponsored dual credit model, wherein an OSU faculty member would work with (and “sponsor”) a high school teacher to deliver an OSU course at a high school. Some state resources are available for teaching these courses, and the benefit will be in reaching some students who might not otherwise have access to OSU courses.

Active Learning Course Redesign

A group of high throughput, high drop/fail/withdrawal (D/F/W)-rate courses will be targeted for redesign using a blended classroom, active learning approach. Active learning has been demonstrated to be a more accessible and inclusive pedagogical approach, and these redesigns will be approached with the intent of closing gaps between different groups of students as well as lowering the D/F/W-rates.

Data-Informed Advising

A project is being undertaken to provide data-based tools for advisors to better assist their students, and with the intent of freeing up some advising time for more meaningful discussions and relationship building. OSU attempted this in the recent past by investing in a software product and service. That attempt failed for a number of reasons, but staff believe they are better positioned to try again and to develop the university’s own tools.

Inclusive Pedagogy

More and more faculty are becoming aware that the way they learned their specialties in the past (mostly in lecture-style classes) is not an effective method for teaching many students today. Data show that most students are choosing to take courses online, whether that is a preferred modality or because it is more convenient. Even beyond that shift in modality, student

expectations for delivery of classroom material have changed. Efforts will be made over the coming year to raise awareness about inclusive pedagogy and direct faculty to the CTL for specific strategies they can use in their classrooms. Options are also being explored for adding information about inclusive pedagogy in CIM to assist faculty developing new courses or modifying existing courses.

GRADUATE EDUCATION

BACKGROUND

Graduate students are integral to the advancement of Oregon State's teaching, research, and outreach and engagement missions. Strong graduate programs contribute to the research productivity of the university, the advancement of knowledge and deep critical thinking, and reputation and rankings. Oregon State is strategically innovating in its graduate and professional programs to meet the changing demands of the economy for skilled workers, to sustain its research excellence, and to meet the personal development goals of its graduate students.

Oregon State offers 57 Ph.D. and 3 other doctoral degrees, more than any other university in Oregon; 57 M.S. and 43 other master's degrees; and 22 graduate certificates. Other than a few very common areas, most of OSU's Ph.D. programs have no counterpart at the other universities.

TRENDS

Fall 2019 graduate (including first professional) enrollment was 5,756 (Figure 2) or 17.6% of the total student population, up 196 from 2018. In-person enrollment at the Corvallis campus has declined slightly since a peak of 3,986 in fall 2015. The graduate population is almost exactly 50/50 male/female (Figure 3), but doctoral degrees are skewed male, while certificates, non-degree, Doctor of Veterinary Medicine (D.V.M.) and Doctor of Pharmacy (Pharm.D.) are skewed female.

International enrollment leveled off at about 1,340 in 2014, and has fluctuated within 50 of that number (1,368 for fall 2019). Master's enrollment is up 90 from 2018, at 2,116, but doctoral students are down to just under 1,600, owing to an above-average graduation rate last year.

Non-degree grad students (most of whom take Ecampus courses) grew by 151, representing >80% of enrollment growth from 2018 to 2019. Ecampus growth is responsible for about 55% of enrollment growth in the past 10 years (Figure 2), all in master's degrees.

In AY2018-19, just over 1,200 total graduate degrees were awarded (not including graduate certificates), 4% more than in the previous year owing to a surge of doctoral awards. Of those, 290 were doctoral degrees, a record for Oregon State and more than any other Oregon university last year (UO usually graduates more). Graduations in recent years have ranged between 871 and 991 for master's (936 in 2018-19), and between 210 and 290 doctoral degrees.

Whereas applicants for undergraduate admission at Oregon State are admitted at a rate of about 70% and Oregon residents make up roughly 70% of the undergrad population, at the graduate level, only 23% of applicants are admitted and only about 30% of students are Oregon

residents. The most selective program is the Veterinary Medicine program for the nonresident pool.

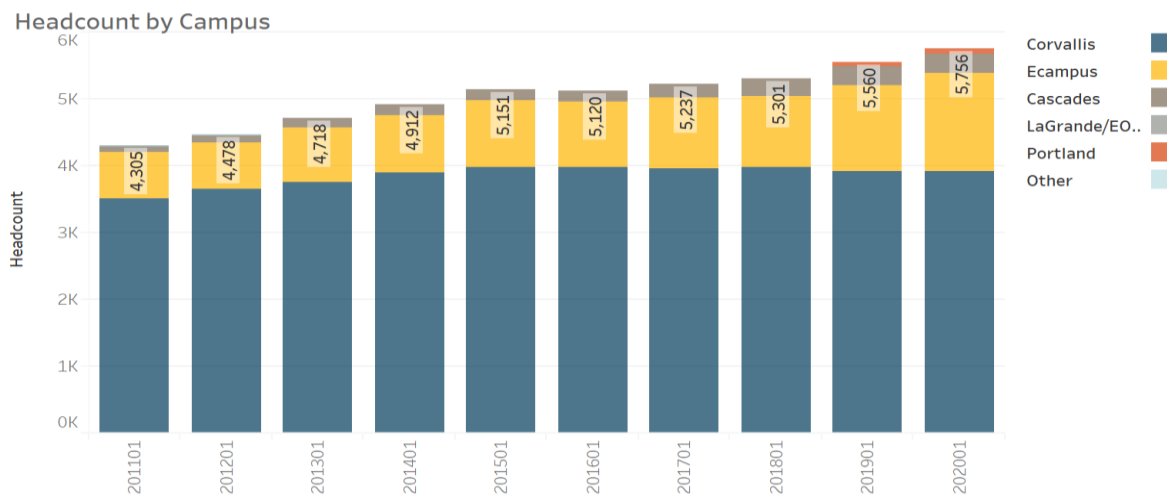


Figure 2. Enrollment by campus/mode in fall term (202001= fall AY2019-20)

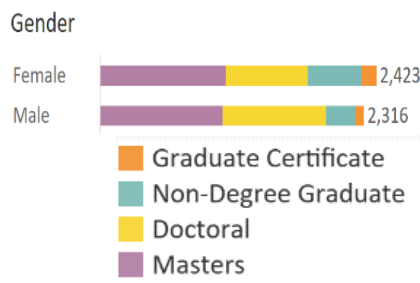


Figure 3. Gender distribution by degree/program in fall 2018

RISKS AND OPPORTUNITIES

Key national and international trends pertinent to Oregon State’s graduate education portfolio are: 1) continued strong demand for employees with a postgraduate (especially master’s) degree; 2) changing demand among international students, which has fueled rising demand for technical fields especially computer science and engineering graduate degrees (and until recently, business); 3) rising demand among working, nontraditional students, which has fueled growth in online degrees and certificates; and 4) demographic and economic changes that have fueled tremendous growth in health professions.

As of 2018, the most recent year for which national data are available, applications, admissions, and matriculations rose nationally and among R1 institutions compared to 2017 (Table 2). The nationwide increase in graduate applicants (2.2%) was dominated by applicants to private, not-for-profit institutions. Doctoral applicants overall increased by 4%, and master’s/graduate certificates by 1.4%. Although our applications dropped both from 2017 to 2018 and from 2018 to 2019, admissions and matriculations rose at a higher rate than for R1 and US institutions as a

whole. Although a drop in applications is a concern, ultimately it is the matriculations that matter, and it is encouraging that Oregon State is outperforming its peers. The Graduate School hired a new recruitment director in late 2019 and expects to see improvements in domestic applications.

Applications		Admissions			% admitted			Matriculations				
Fall	US (K)	R1 (K)	OSU	US	R1	OSU	US	R1	OSU	US	R1	OSU
2017	2,182K	1387K	6,163	917K	480,706	1,712	42.0%	34.7%	27.8%	524K	246K	1,029
2018	2,192K	1402K	5,943	935K	496,041	1,773	42.7%	35.4%	29.8%	534K	248K	1,069
2019			5,833			1,802			30.9%			1,105
% Change*	2.2%	1.7%	-3.6%	2.0%	3.2%	3.6%				2.1%	0.6%	3.9%

The US remains a primary destination for international graduate students, owing to the reputation of US universities and the inability of many nations’ own universities to meet the rapidly rising demand for higher education especially in China, India, South Korea, and Saudi Arabia. Nationally, temporary visa holders earn over half of doctorates in computer sciences, engineering, and economics. However, China’s higher education supply is rapidly catching up with demand, and US-China tensions are also depressing applications; Saudi Arabia too is building out its universities and recently stopped a program that offered a full ride to citizens studying in the US. A substantial drop in demand for business degrees by Chinese students has led to falling enrollments in business programs in the last few years. Rapidly rising demand in India, Nigeria, and other countries is expected to sustain international demand for OSU graduate education for another decade, greatly assisted by the INTO OSU partnership which recruits students from 55 countries. Capturing these growth opportunities in a highly competitive market will continue to require flexibility and innovation.

Online graduate education is growing fast: 44% of graduate students are expected to be enrolled in fully online programs by 2025, up from 36% currently¹. “While the majority of graduate students still fall into the 30 and younger age group, a rapid increase has been seen in the number of students 40 and older.”²

As Figure 4 shows graduate degree conferrals increased the most from 2013-17 in health professions, an area in which OSU offers few degrees.

Though focused on STEM fields, many of the recommendations from the National Academies report (issued in 2018) are generally applicable to all graduate education.

¹ Online Higher Education Market Update 2018—Report 1: The National Market, Eduventures

² Current trends in graduate education, page 12

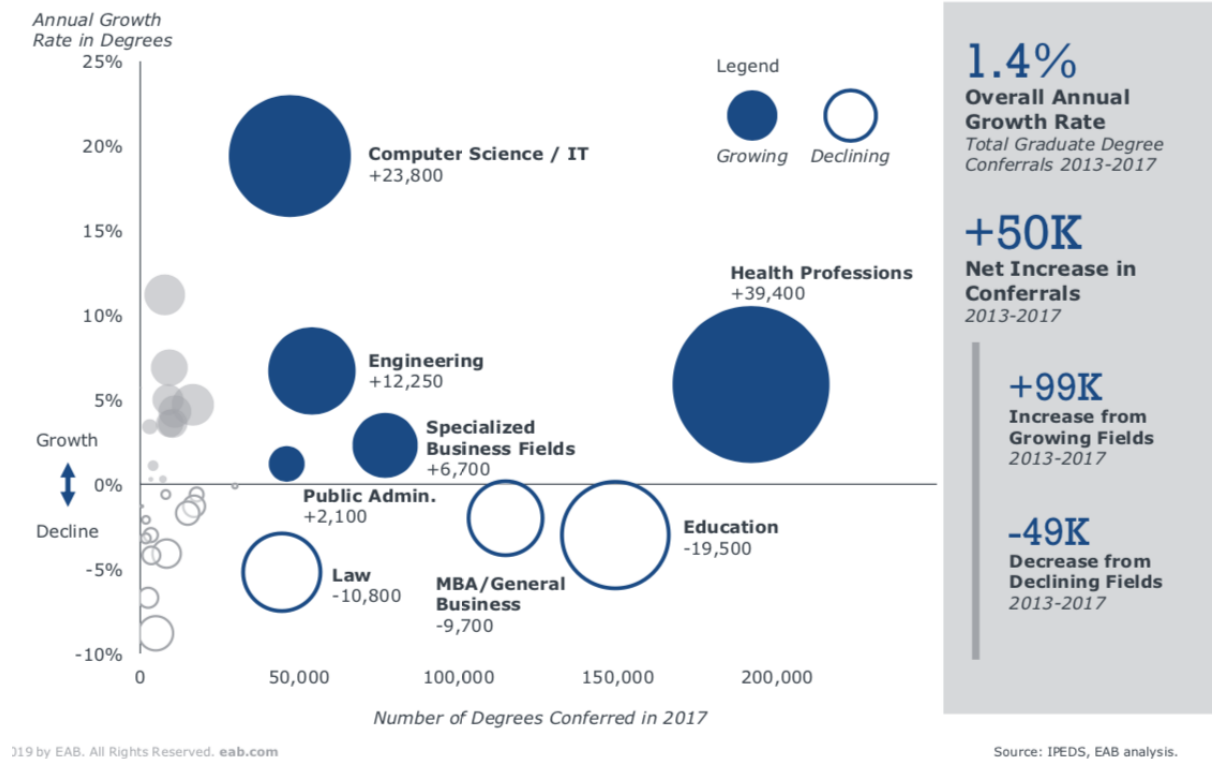


Figure 4. Change in Master’s and professional doctorate conferrals by field, 2013-2017. The x axis shows the size of the field and the y axis shows the rate of change as a percentage of 2013 conferrals; the size of circles indicates the numerical change in conferrals.

The report urges universities to rethink graduate education to train students more broadly, in order that they may succeed at careers that have not been invented yet, to innovate education, keep pace with the evolving demands of the marketplace, and focus on the future needs of the students rather than solely of the value of the student to the university in supporting its teaching and research missions. Workers increasingly seek retraining or new training later in their careers (as noted above, for OSU these nontraditional learners have fueled the demand for Ecampus).

One important consequence of the faster-changing workplace change is the growing demand for versatility, for ‘intellectual mobility’ and transferable skills. These include interdisciplinary training and experience working in teams, leadership, and communications. The report urges two parallel types of reforms at universities:

- Focus on the student: a) mentoring of students (and therefore training in mentorship of faculty) needs to be retooled to follow “evidence-based and inclusive teaching and mentoring practices” and provide “additional mentor or advisor relationships” besides the advisor and also outside academia. A key tension is that most faculty are unprepared, even reluctant, to give career advice to master’s students or to advise doctoral students on non-academic paths, yet this is the main trajectory for many of them. b) Graduate schools should support such efforts. c) Faculty should be rewarded (including through P&T) for best-practices mentoring of their own and other students. d) The institution should provide stronger support for graduate student mental health.

Curricula should be reformed to emphasize core competencies. The report separates competencies for master's and Ph.D. For masters: a) Disciplinary and interdisciplinary knowledge; b) Professional competencies; c) Foundational and transferrable skills that transcend disciplines and are applicable in any context, such as communications, leadership, and working in teams. d) Research competency in the scientific method, etc. For doctoral students: a) develop scientific and technological literacy and conduct original research; and b) develop leadership, communication, and professional competencies.

In a complementary report, the Council of Graduate Schools identifies key cross-cutting skills that are lacking in current graduate education, including data science and big data skills; science policy; governance, risk, and compliance; time management and project management; and striving for diversity and inclusion.

INITIATIVES

Graduate Education Strategic Plan

SP4.0 calls for diversifying the university's research portfolio and strategically building graduate programs. The university's top priority for AY2019-20 is developing a comprehensive strategy for graduate education led by the vice provost and dean of the Graduate School.

These efforts launched with the formation of a small but diverse committee, including an external representative from Business Oregon, and preparing a briefing document to share broadly with stakeholders. These efforts were followed by a series of workshops on a) developing foresight about graduate education at OSU; b) considering how to capitalize on opportunities; and c) developing the right mix of programs for OSU. Preliminary themes that have emerged are strengthening interdisciplinary opportunities, offering training in core competencies (as urged by the National Academies), providing stronger support systems for students, and continuing to innovate how we reach and serve students. During spring term, a graduate education strategic plan will be developed and evaluated with input from university stakeholders.

Expanding Graduate Student Funding

Despite Oregon State's tremendous success at bringing in research revenue, the cost of graduate assistantships (GRA+GTA) continues to rise and current funds from external grants and institutional sources are supporting a shrinking number of graduate students. The number of GAs has decreased from 1,952 students in 2014-15 to 1,913 in 2018-19 (2% in 4 years) despite a growth in the number of students enrolled. This means that approximately 2/3 of graduate students are self-funded. While self-funding is the norm in many professionally-oriented programs and in certificates (even in STEM fields, 2/3 of master's students are self-supporting), the lack of funding for GAs poses particular challenges for recruitment in some programs. The causes of these changes are many, and we will be exploring in depth policy and structural initiatives that could alleviate concerns the problem, improve recruitment and retention, and reduce stress and uncertainty for students.

Diversifying Graduate Population

Oregon State has made strides in diversifying its graduate population, with growing percentages of women in STEM fields and of students of color overall, in some cases exceeding national trends. Gender imbalances persist in engineering (overwhelmingly male), and education, pharmacy, and veterinary medicine (overwhelmingly female). Furthermore, the university slightly

lags the national percentages of domestic students of color (22% vs 34%), especially African American students (2.4% vs 12.5%). Strengthening diversity and inclusion will continue to be a high priority for the Graduate School. In 2019, the Graduate School hosted a number of workshops to promote 'holistic admissions', a rigorous approach to graduate admissions that is likely to increase both the success and the diversity of OSU's graduate students. A number of graduate programs have moved in the direction of holistic admissions, changing both their evaluation procedures and in some cases also their admissions questions. The Graduate School also reorganized and streamlined the process of awarding diversity fellowships following an analysis that the previous approach was fragmented and ineffective and has seen a surge in opportunities to attract diverse incoming students.

To improve the well-being of graduate students, the Graduate School is developing a portfolio of actions ranging from strengthening community to training faculty in being better mentors (heeding the recommendation in the Academies report that that sets students up better for success both during and beyond school).