A Time of Change:
PUBLIC POSTSECONDARY EDUCATION IN OREGON

TABLE OF CONTENTS

INTRODUCTION AND STATEMENT OF PURPOSE

> The state role is crucial to public higher education in the United States. And public higher education is crucial to college attainment nationwide, because most students attend public colleges and universities. Yet the financial model for public higher education remains uncertain. States made deep cuts following the start of the economic downturn in 2008. And while there has been some recovery in many states, it has been modest. For many in public higher education, it is clear that states have no intention of resuming their historic role in financing higher education.[1]

In 2013, League of Women Voters of Oregon members voted at convention to study and update their state position on higher education. The scope of the study was to include review of our Public Postsecondary Education position, examining the role of the state and its public educational institutions in meeting the goals and challenges of postsecondary education in the 21st century.

CHAPTER 1. THE NEED FOR HIGHER EDUCATION

> "We don't have enough engineers being grown here today, so we have to recruit them from all over the state, all over the country, all over the world," said Sam Blackman, CEO of Elemental Technologies. "Recruiting is the number one issue we face."[2]

The Bureau of Labor Statistics of the US Department of Labor provides an estimate of national job growth between 2012 and 2022. The job categories with the highest projected growth and best average salaries include those in the fields of health practitioners and technical operations (21.5% increase), computer and mathematical operations (18%), and business and financial operations (12.5%). Those with high growth and medium salaries include community and social services (17%) and construction and extraction operations (21.4%). Those with projected high growth in demand, but low salaries include health care support (28.1%), and personal care and service operations (20.9%).[3]

Writing in *Industry Week*, John Paul Williams discusses how the manufacturing sector is facing a major loss of employees due to a retiring baby boomer population and is having problems in attracting new workers due to a lack of interest, a negative perception of manufacturing, and a shift in industry needs:

> While there will always be a need for low-cost workers for commodity manufacturing, disruptive technology has transformed the talent profile for much of the industry. What's needed: knowledge workers who can leverage big data analytics programs, 3D modeling and printing, and robotics, among other emerging technologies, to drive product and process innovation to new heights, while accelerating development cycles.[4]

A recent report by a business organization, America's Edge, discussing Oregon Education goals noted:

> Oregon jobs requiring post-secondary education are expected to grow 40 percent faster than jobs for high school dropouts. The vast majority of high-growth, high-wage positions will require post-secondary education. Positions in science, technology, engineering and math (STEM) are growing particularly fast, and 94 percent of these jobs will require post-secondary education by 2018.

The report goes on to emphasize that "today's jobs require workers with not only a mastery of the core curriculum, they also need a workforce with problem-solving, critical thinking, communication and collaboration skills."[5]

In an interview, Ben Cannon, Executive Director of Oregon's Higher Education Coordinating Commission, commented that the need for higher education goes beyond mere preparation for jobs:

> The function of higher education is to build knowledge and capacity for Oregonians to flourish in their lives and to build family and community. The benefits are far greater than those of the workplace, and they accrue to the individual and the larger community. Public higher education is a joint and shared responsibility.

CHAPTER 2. POSTSECONDARY EDUCATION: THE NATIONAL PICTURE

2.1 History of Higher Education

Harvard is the oldest college in the United States, founded in 1636. By the time of the War for Independence, there were nine degree-granting colleges. However, higher education in the Americas was originally established with a primary objective of providing education for the clergy and was expensive and limited only to the wealthy.[6]

Although the opportunities were limited, many of the founding fathers, including Jefferson and Franklin, encouraged support for educational opportunities. This early national recognition of the importance of education is reflected in the 1787 Northwest Ordinance, which defined rules for the development of new territories.

> Art. 3. Religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged.[7]

Public postsecondary education received its greatest federal support with the passage of the Morrill Act (also known as the Land Grant Act) in 1862.

> It donates public lands to states, the sale of which will be used for the "endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." Many prominent state universities can trace their roots to this forward-thinking legislation.[8]

Following the Morrill Act, public higher education began its slow progress towards its current structure throughout the United States.

2.2 National Discussions of Public Higher Education

Noting that the United States no longer leads the world in the number of citizens with a higher education degree, President Obama set a goal for 60% of the population to hold a credential, 2-year or 4-year degree by 2020.

> In 1990, the U.S. ranked first in the world in four-year degree attainment among 25-34 year olds; today, the U.S. ranks 12th. We also suffer from a college attainment gap, as high school graduates from the wealthiest families in our nation are almost certain to continue on to higher education, while just over half of our high school graduates in the poorest quarter of families attend college.[9]

Less than 40% of United States population held at least an associate's degree, according to 2012 US Census figures. Oregon was close to the national average at 39.8%.[10] Speaking at the Oregon Higher

Education Symposium in January 2014, Jamie Merisotis of the Lumina Foundation cited a Georgetown University Center on Education and the Workforce study predicting that by 2020, 65% of all US jobs will require a postsecondary credential.

Given that public institutions account for the majority of postsecondary degrees and credentials, states across the nation are facing similar problems and having similar discussions about the future of their public colleges and universities. Some common issues can be summarized to include:

- Less state financial support for postsecondary education, and greater reliance on tuition to provide funding for educational services
- Need to reach and support more non-traditional students, such as minorities, low-income, adults, and first in family to attend college
- Need to minimize cost to students

    o Coordination of course numbering and content across all institutions (research universities, regional and technical colleges, community colleges) to enable transferability within the system
    o Distance and online learning opportunities
    o Prior learning credit

- Better coordination with pre-kindergarten through 12th grade education to reduce the need for remedial coursework
- Need to measure success (performance contracts and performance funding).

2.2.1 State Support for Higher Education

Although the level of state appropriations for public postsecondary education varies cyclically with economic downturns and recoveries, the overall trend in most states has led to decreased state support and greater reliance on tuition. By 2013, 47.5 % of total educational revenue in US postsecondary institutions was provided by net tuition, that is, the gross amount of tuition and fees, minus state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. In Oregon, tuition accounted for over 60% of this revenue.[11]

> The combination of state government support, local tax appropriations, and tuition revenue constitutes the principal source of support for instructional programs at public institutions. … At public, two-year institutions, on the average, just over 75 percent of educational operating revenue is derived from state or local sources, with the remaining 25 percent coming from tuition revenue. At public four-year institutions, on the average, well over 40 percent of educational operating revenue is derived from tuition with the remainder from state and other sources.[12]

2.2.2 Changing Student Populations

In order to meet the goal improving higher education attainment rates, states must increase the number of non-traditional students that successfully acquire certificates, 2-year and 4-year degrees. This population includes ethnic groups such as blacks and Hispanics, low-income students, students who are the first in their families to attend college, and adults returning to or entering college for the first time. A Lumina Foundation report, *A Stronger Nation through Higher Education,* notes that in 2014, 40.4 % of 25-64 year olds held a 2 or 4-year degree. However, the figures were 28.7% for Blacks, 20.9% for Hispanics, and 23.7% for Native Americans.[13] The Foundation's 2014 report noted:

> If attainment rates for different racial and ethnic groups do not change, only about 37.8 percent of today's 14- to 51-year-olds will have college degrees in 2025 — almost a full percentage point less than the current rate.[14]

...there are serious and persistent gaps between graduation rates for different student groups. The six-year graduation rate in 2011 for black students was only 39.9 percent, and for Hispanics it was 51.0 percent. Both of these rates are far below those achieved by whites (62.1 percent) and Asians (69.2 percent).[15]

2011 National Six-Year Graduation Rates

■ 2011 National Six-Year Graduation Rates
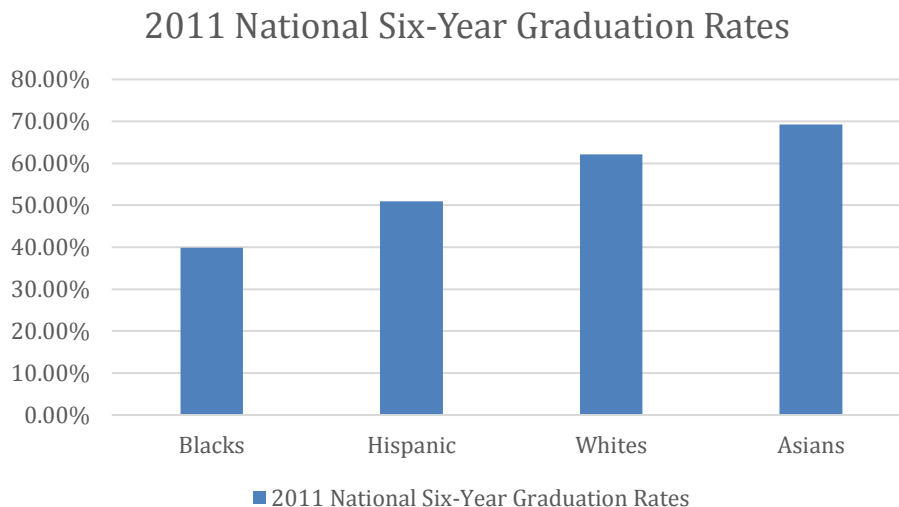
Low income is also a deterrent to college attendance with 82.4% of students in the top third income level enrolling, but only 53.5% of those in the bottom third.[16]

Adult students are also important to achieving the 60% goal. Many states are developing programs to address this need. These efforts include distance learning, on-line and hybrid courses, credit for prior learning, and branch campuses.

A large percentage of these non-traditional students begin their postsecondary education in community colleges – some working for certificates, others for associate's degrees or with plans to transfer to a 4-year institution. Completion rates for these students, however, are very low. President Obama emphasized the importance of community colleges for providing needed opportunities for many Americans, calling for an additional 5 million community college graduates by 2020.[17]

Nationwide, states struggle to measure "success" within their public postsecondary institutions. Many have "performance contracts" that seek to set goals for the short-term future. Some have begun to tie these contracts to performance funding – usually a small percentage of total support. The Obama administration has launched a College Scorecard.

> The Scorecard provides clear, concise information on cost, graduation rate, loan default rate, amount borrowed, and employment for every degree-granting institution in the country. By making these key pieces of information available in an interactive and easy-to-read format, the College Scorecard enables students and families to compare colleges and make the best decision for their future.[18]

Suggestions that some future federal funding be tied to ratings on such a scorecard have met with concern in the academic community. A report by the American Council on Education, *Rankings, Institutional Behavior, and College and University Choice,* notes difficulties with developing accurate statistics. Among the concerns are:[19]

- Accurate completion data. Most previous measures of graduation rates count transfers from an institution as drop-outs and track only traditional first time students.
- Danger of institutions "gaming" the system

- Difficulty of defining peer groups for comparison of institutional value. For example, community colleges in states such as California and Florida that have significant state support and therefore lower tuition would have an unfair advantage over colleges in states with a low level of such support. Schools with a low number of student loans might have a misleading percentage of defaults. Schools serving large numbers of non-traditional students would have lower 6-year graduation rates.

CHAPTER 3. OREGON'S POSTSECONDARY INSTITUTIONS

3.1 History of Postsecondary Education in Oregon

When the great migration of Americans from the East Coast and Middle West arrived in Oregon between 1835 and 1870, settlers were concerned about educating their children. With the official Oregon Territory treaty in 1849, followed by statehood in 1859, land grants were made by the federal government to communities for public schools. However, public education beyond primary school was not a specific priority. One of the first higher education institutions was the private Monmouth College, established in 1856. After statehood, the Oregon Assembly took notice and over the next 90 years, enacted legislation for the seven public universities currently in Oregon.

Oregon State University, Corvallis: Corvallis College was designated the State Agricultural College in 1868 and under state jurisdiction from 1885. It is the only higher education institution in Oregon receiving federal land grant funding dating back to its founding. It changed from the Oregon State College to Oregon State University in 1961.

University of Oregon, Eugene: The Legislature established the University in 1872, and it officially opened in 1876. The first state funding, $30,000, was received in 1885. Columbia College, a private school built in the late 1850's south of central Eugene, was open a short time in the yet set the stage for establishing the University.

Southern Oregon University, Ashland: The Ashland Academy was started in 1872 with local funding, and became public in 1889 as the Ashland College and Normal School. After being closed for lack of funding for five years, the school was reopened from 1895 as Southern State Normal School. With a lack of state funding, it was closed again in 1909. It was reestablished in 1926, and in 1939 became the Southern Oregon College of Education, and then Southern Oregon State College in 1975. It achieved university status in 1997.

Western Oregon University, Monmouth: Western was created by the Legislature in 1883 as the Oregon State Normal School, succeeding Monmouth University. In 1939, it became the Oregon College of Education, then Western Oregon State College in 1981, and Western Oregon University in 1997.

Eastern Oregon University, La Grande: It was started in 1929 as Eastern Oregon Normal School by legislative action. It became Eastern Oregon College of Education in 1939, and a university in 1997.

Oregon Institute of Technology (OIT), Klamath Falls: OIT started out as the Oregon Vocational School in 1947 under the Oregon Department of Education. It came under the authority of the State Board of Higher Education in 1960. It still is the only higher education technology institution in the Pacific Northwest.

Portland State University, Portland: The Vanport Extension Center, which started as a community facility in 1946 to educate veterans, became Portland State College in 1955. The Legislature granted the school university status in 1969.

The first four schools had local boards of regents as their governing authority until 1929 when the Legislature formed the Oregon State Board of Higher Education, which abolished them. The State Board was appointed by the Governor with Senate approval. The seven institutions above operated under a Chancellor as the Oregon University System (OUS). As the result of legislation enacted since 2011, the State Board and the OUS have been phased out. By July 1, 2015, all seven universities were operating under independent boards.

The higher education system also includes the 17 regional community colleges. These institutions are locally funded by special districts, but also receive funding from the state. They each have an elected board of directors. Other higher education institutions, outside the state system, are private, degree granting schools, non-Oregon Distance schools, and Oregon career schools.

3.2 The Current Situation in Oregon

3.2.1 The Public Universities

Oregon's public universities include the seven public universities discussed in section 3.1 and two centers or affiliates. Oregon's technical and regional universities are Eastern Oregon University, (EOU), La Grande; Oregon Institute of Technology (OIT or Oregon Tech), Klamath Falls and Wilsonville; Southern Oregon University (SOU), Ashland; and Western Oregon University (WOU), Monmouth. The larger universities include Oregon State University (OSU), Corvallis and Bend; University of Oregon (UO), Eugene; and Portland State University (PSU), Portland. The two centers or affiliates are Southwestern Oregon University in Coos Bay (on the campus of Southwestern Oregon Community College) and Oregon Health and Science University (OHSU), Portland.[20] Southwestern Oregon University Center is a collaboration between Eastern Oregon University and Southwestern Oregon Community College, through which students may take university courses and earn an Oregon university degree while living in Coos Bay.[21] For information about OHSU, see Appendix 3.

The mission statements of all seven public universities stress the importance of intellectual learning and growth. Both UO and OSU, as larger universities, include their research component in the mission, and OSU includes its extension role. Mission statements for each of the universities are available on their websites.

The seven universities offer Oregon students a variety of programs and learning environments, allowing students to find a match for their needs. Cooperation between the universities and the introduction of increased online learning programs are expanding these options.

Enrollments for the three largest universities are over 20,000 undergraduates and approximately 4500 graduate students. The smaller universities have undergraduate enrollments of 6000 or less and graduate enrollments between 50 and 700 students. In-state undergraduate tuition varies between $6000 and $11,000. Graduation rates are lower for the smaller universities, between 30% and 45% in six years. In part, this reflects transfers to other universities for specific majors. UO and OSU have graduation rates in six years of over 60%. More information is available at their websites.

3.2.2 Oregon Community Colleges

Education experts have identified community colleges as a crucial part of the higher education needs of the United States. To support community colleges, the federal government awards grants to them in support of specific programs. In 2014, Southwestern Community College received a $2.4 million grant from the US Department of Labor to expand specialized training for careers in health care and natural resource industries, the only such grant to an Oregon college.[22]

Oregon has 17 separate community college districts with over 60 campuses and centers across the state.[23] Areas not included in a community college district may contract with a district for services.

Currently, Grant County receives services from Blue Mountain Community College (Pendleton). Lake County contracts with Klamath Community College (Klamath Falls) and the city of Burns and Harney County are served by Treasure Valley Community College (Ontario).[24]

Each district is governed by an elected seven-member local board with broad powers to hire personnel, buy and manage district property, and set tuition and fees.

Community colleges provide numerous services:

- Lower division collegiate coursework leading to an associate's degree or transfer to a four-year institution
- Career and technical education
- Accelerated high school learning opportunities
- Classes in adult literacy, GED preparation, and English as a second language
- Adult continuing education

The Office of Community Colleges and Workforce Development (CCWD) provides state oversight and coordination. Previously under the Department of Education, the CCWD has been under the Higher Education Coordinating Commission since July 2014.

Oregon's community colleges vary in size from about 800 students at Oregon Coast Community College in Newport to about 89,000 students, of whom 33,000 are full time, at the four Portland Community College (PCC) campuses. Coursework also varies considerably, in part in response to local needs. For example, Oregon Coast Community College has a marine biology and biological oceanography program, and Treasure Valley and Umpqua have programs related to Oregon's wine industry. A high percentage of community college students are older than the traditional 18-21 age group. In 2015, the average age of students at PCC was 29, with 32% from minority populations.[25] Statewide. 27% of community college students were between 20 and 27 years old, 33% between 28 and 49, and 20% over 50. During the 2013-2014 term, 91% of students were part-time.[26]

3.2.3 Other Postsecondary Institutions

In addition to the public higher education institutions in Oregon, there are 21 private, independent, non-profit degree-granting institutions; 28 private (for profit and not for profit) degree-granting institutions that are not based in Oregon; and over 200 vocational/technical/career schools offering certificates in various programs.[27]

CHAPTER 4. RECENT LEGISLATION AND CHANGES TO GOVERNANCE

Since 2011, Oregon's Legislature has set new goals and has made numerous changes to the governance of public education. In 2011, Senate Bill (SB) 552 abolished the office of Superintendent of Public Instruction as a stand-alone elected office and named the Governor as superintendent of public instruction. SB 253 set the 40-40-20 goals for education in Oregon, specifying that by 2025, 40% of Oregonians should achieve a bachelor's degree or higher, 40% an associate, technical degree, or certificate, and 20% a high school diploma.

SB 909 (2011) established the Oregon Education Investment Board (OEIB) to oversee investments in education over the entire continuum, from early childhood through postsecondary education. The bill authorized the board to appoint a chief education officer and the Governor to appoint the Deputy Superintendent of Public Instruction.

The 2012 Legislature passed SB 1581, which defined the positions under the oversight of the Chief Education Officer and required annual achievement compacts. Various aspects of the OEIB met with opposition across the state. In response, the 2015 Legislature passed SB 215, abolishing the Board,

changing the name to Chief Education Office, and modifying the duties of the office. The Office website declares:

> With our unique vantage point from birth through college & career, we bring strategic leadership and coordination to key student transition points and other critical areas across the education continuum to improve outcomes for each Oregon student.[28]

The requirement for achievement compacts was removed.

SB 242 (2011) established the Higher Education Coordinating Commission (HECC), consisting of 14 volunteer members appointed by the Governor. Nine are voting members; the remaining members represent the faculty and staff of the universities and community colleges. The Commission appoints an executive officer. In 2013, House Bill (HB) 3120 transferred the administrative authority of the Oregon Student Access Commission to the Office of Student Access and Completion and placed it under the oversight of HECC.[29] In addition, authority over community colleges (Division of Community Colleges and Workforce Development (CCWD)) was moved from the Department of Education to HECC as of July, 2014. HB 2408 officially changed the name to Office of Community Colleges and Workforce Development.

In 2013, SB 270 authorized independent boards for the University of Oregon and Portland State University and the option for independent boards for the other Oregon University System institutions. By 2015, all the universities had independent boards, nominated by the Governor and approved by the Senate. The bill transferred much of the authority of the Department of Higher Education, dividing responsibilities between HECC and the governing boards. The 2015 Legislature passed SB 80, abolishing the Oregon University System, the Office of Chancellor, and the Board of Higher Education.

In recent sessions, the legislature has called for HECC to establish committees to investigate the feasibility of various education proposals, including:

- Accelerated Learning "to examine methods to encourage and enable students to obtain college credits while still in high school."
- The "Pay It Forward Plan" (PIF)
- "Free" Community college for some students
- Community college course placement
- Open Educational Resource, i.e. free or low cost alternatives to traditional text books
- Affordable baccalaureate degree

The 2015 Legislature passed SB81, authorizing a pilot program, named "Oregon Promise" to begin with the 2016-2017 academic year. For more discussion of Pay It Forward and Oregon Promise, see the section on Financial Aid.

HECC posted a summary of the 2015 legislative results at [HECC Overview: Progress toward state goals, key priorities for student success, budget overview and funding history](#).[30]

CHAPTER 5. CURRENT STRUCTURE OF PUBLIC POSTSECONDARY EDUCATION IN OREGON

5.1 Higher Education Coordinating Commission (HECC)

With the abolition of the Oregon University System, HECC became the principal overseer of Oregon's postsecondary education, answering directly to the Governor and Legislature. To varying degrees, its duties touch on all aspects of postsecondary education, including public and private colleges, universities, career schools and colleges, community colleges, and student financial aid.

HECC's vision statement declares:

> The Higher Education Coordinating Commission (HECC) is dedicated to fostering and sustaining high quality, rewarding pathways to opportunity and success for all Oregonians through an accessible, affordable and coordinated network for educational achievement beyond high school.[31]

While leadership, governance, and operation fall to the individual owners, boards of directors, and administrators of the postsecondary institutions (both public and private), HECC "is generally responsible for advising on, adopting, and implementing state policies, to ensure that the network of colleges, universities, workforce development initiatives and pre-college outreach programs remain well-coordinated and student friendly."[32]

The commission's major responsibilities and statutory authorities include:

- Providing one strategic vision for higher education in Oregon
- Developing biennial budget recommendations for public postsecondary education in Oregon and making funding allocations to Oregon's public community colleges and public universities
- Approving new academic programs for the public institutions and degrees for some private institutions
- Managing key programs

  o Allocating Oregon Opportunity Grants (state need-based student aid) and other student access programs
  o Working with the Oregon Workforce Investment Board and the Oregon Employment Department to manage implementation of the federal Workforce and Opportunity Act
  o Developing dual credit, transfer, and credit for prior learning standards (Oregon Revised Statutes (ORS) 340.320, 341.430 and 350.110)

- Licensing private career and trade schools, overseeing programs for veterans, and implementing other legislative directives.
- Evaluating success of efforts by conducting data collection, analysis, research and reporting and conducting annual evaluations of public universities.[33]

HECC's *Strategic Plan: 2016-2020* stresses the need for "close partnerships with the governing boards, administrators, faculty, and students at the institutions we serve" and a "convening role" between higher education and communities. The plan presents strategies for six areas:

- Goal-setting
- Funding
- Pathways
- Student support
- Affordability
- Economic and Community Impact[34]

To carry out HECC's legislated duties, the Executive Director oversees the work of seven offices:

- Office of the Executive Director, Policy, and Communications
- Office of Student Access and Completion (OSAC) –responsible for student public and private financial aid and student outreach programs such as ASPIRE
- Office of Community Colleges and Workforce Development (CCWD) - provides coordination and resources related to Oregon's 17 community colleges, 18 adult basic skills providers, and nine local workforce areas. CCWD also provides statewide administration of workforce and education programs under the Workforce Investment Act (WIA), General Educational Development (GED), and other workforce and education programs for the benefit of Oregonians

- Office of University Coordination - academic and fiscal coordination related to Oregon's seven public universities
- Office of Private Postsecondary Education - oversees the quality, integrity, and diversity of private postsecondary programs in Oregon for the benefit of students and consumers
- Office of Research and Data - collects, analyzes, and reports research and data on postsecondary education
- Office of Operations - provides accounting, budget, procurement, payroll, and informational technology support for all HECC offices.[35]

5.2 Independent Governing Boards for Universities

According to state law,

> "Governing board" means a governing board of a public university listed in ORS 352.002 that manages the affairs of the university by exercising and carrying out all of the powers, rights and duties that are expressly conferred upon the governing board by law, or that are implied by law or are incident to such powers, rights and duties.[36]

The role of the University Board is defined in detail in ORS 352. The Board is given the power to manage the affairs of the university.

> A university with a governing board is a governmental entity performing governmental functions and exercising governmental powers. A university with a governing board is not considered a unit of local or municipal government or a state agency, board, commission or institution for purposes of state statutes or constitutional provisions.[37]

The Governor appoints eleven to fourteen members to the Board, which must include one student and a faculty member. Board terms, in general, are four years. The university boards can manage property, sign contracts, approve grants, and sell revenue bonds for capital projects. The governing board manages tuition and fees without having to wait for approval of a state authority for increases below 5% per year. Larger increases must be approved by HECC or the Legislature. For increases above 3%, a university must submit to HECC a report explaining the need for the increase.

The board is expected to be transparent. The law defines specific requirements and limitations for board activity, including submission of the university's mission statement and submission of annual evaluations that consider success in meeting mission and outcomes. The universities must submit proposed significant changes to their academic program to HECC for approval. These academic changes should be consistent with the university's mission and not impinge on the programs or geographic locations of other Oregon universities. Each institution submits its requests for state funding to HECC on a biannual basis. HECC then submits its combined recommended budget to the Governor for consideration in preparation of the Governor's recommended budget, which is then sent to the Legislature. Powers of the boards are detailed in ORS 352.087.[38]

Because of financial concerns and shrinking enrollment, HECC has been working closely with Southern Oregon University and Eastern Oregon University to track their progress. According to HECC communication, as of January 2016, both universities are making progress. Information on the process is available on the HECC website.[39]

Evaluating the success of the move to independent boards may require some time. Expectations for the new independent board structure include the development of tools to drive more philanthropy, the ability to appoint board members closer to campus allowing for quick action on issues, faster capital decisions, and a greater ability to keep students informed about changes in fee and tuition.[40]

6.1 The 40-40-20 Goal

Adopted by the Oregon Legislature in 2011, the 40-40-20 goal aims for a population that includes 40% of Oregonians having a 4-year bachelor's, graduate or professional degree, 40% an associate degree or other postsecondary credential, and 20% a high school diploma or GED. Many within the postsecondary education field have indicated that this goal is highly aspirational.

Among the Higher Education Coordinating Commission's duties are data collection and monitoring of this goal. The 2016-2020 HECC Strategic Plan states:

> The 40-40-20 Goal establishes a clear target – a "North Star" aligned with Oregonians' economic, civic, and social aspirations – against which to generally gauge the state's educational progress. We believe that for the goal to be meaningful, it must be accompanied by the clear understanding that increased levels of attainment of diplomas, degrees and certificates must be achieved equitably, with Oregon's diversity – of race, ethnicity, gender, home language, socioeconomic status and geography – equally well-represented in each stage.[41]

To achieve these goals requires significant changes in educational policy and practice. In the most recent data available, 31% of working age adults (ages 25-64) in Oregon held a bachelor's degree or higher, 17% had an associate's degree or credential, 42% completed high school and 10% had less than a high school education.[42]

A recent Lumina Foundation report, cited in *The Oregonian* in April 2016, suggested that 25% of the adult population had attended some college without acquiring a degree. HECC's Strategic Plan estimates this group at 19%. African American, Hispanic, and Native American Oregonians were much less likely to have achieved a bachelor's degree (less than half as likely) or associate's degree or certificate (about 25% less likely).[43]

Progress toward 40-40-20 goal
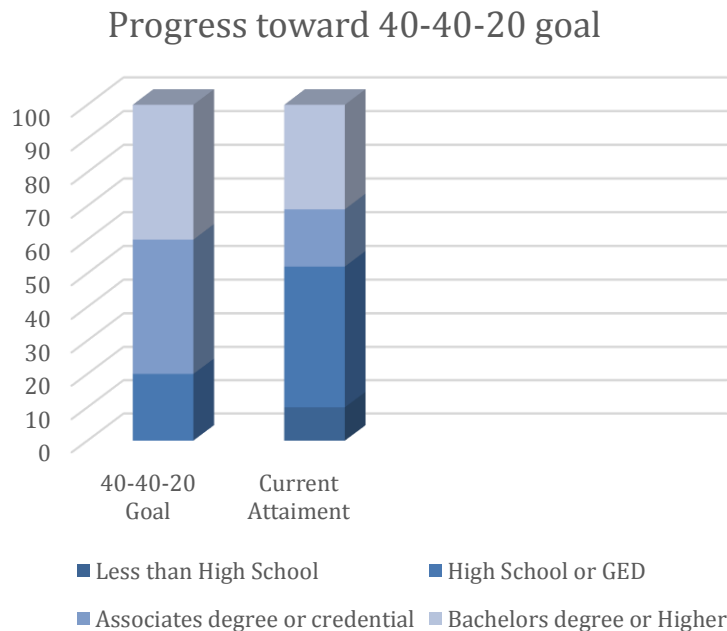
Between 2006 and 2013, Oregon added approximately 90,000 degree holders in the working age group. This partly reflects increased enrollments in higher education during the Great Recession and in-migration of degree holders from other states. The picture does not seem quite so bright

with the recent "pipeline" of students – sophomores enrolled in Oregon high schools in 2003-2004. By 2013, only 22% of members of this group had earned a 4-year degree, 6% earned a 2-year degree or certificate, 62 - 65% had completed high school or a GED, but had not earned a certificate or degree, and 7 -10% had not completed high school or earned a GED.[44]

In its 2016-2020 Strategic Plan, the Commission recognizes that the 40-40-20 goal is a very imprecise measure for higher education achievement. To meet the goal as currently constructed would require that a significant portion of the working age population pursue additional education, including those nearing retirement, even if it is not needed in the job market. The Commission plans to develop a separate goal for the adult population for presentation to the 2017 Legislature. HECC also sees a need for interim goals and progress reports, especially for students of color and low-income students. Separate goals for graduate level work also may be developed. All goals are seen to require flexibility in response to changing needs in the job market.[45]

6.2 Diversity and the Equity Lens

In April 2014, HECC and the Oregon Education Investment Board published a letter, signed also by Governor Kitzhaber, to institutional leaders outlining the Equity Lens as a cornerstone of the State's education policy and appropriation process. The primary focus of the Lens is on race and ethnicity, and it defines and describes "underserved students" and the "achievement gap" between the populations of communities of color (now 30% of the student population), immigrants, migrants, and low-income rural students, and more affluent white students. It also targets the gap between Oregon students as a whole and those in the rest of the country. It articulates a set of beliefs about students and communities and asks a series of questions designed to help institutions focus on where their resource allocations are currently being made and how their commitment to equity is being carried out.[46]

Disparities in higher education among a number of groups of students were addressed in HB 3308 in 2015. A substantial set of recommendations came from the subsequent study. As directed by the bill, in December of 2015, the HECC convened a workgroup of stakeholders to analyze and develop recommendations pertaining to addressing disparities in higher education through continuing education. The bill was a direct outcome of students sharing their concerns and describing less than ideal experiences at public higher education institutions.

Recommendations include the following:

- Adopt Cultural Fluency and Competency Standards for all employees of Oregon's public colleges and universities as presented in this report
- Require each college and university to provide ongoing training and development opportunities that foster the cultural fluency and competency of campus staff, faculty, and administration.[47]

In addition, a major Affirmative Action and Diversity/Inclusion Plan for 2015-17 was recently published by HECC. It focuses primarily on employment opportunities to develop a diverse and inclusive workforce, and provides cultural competency learning opportunities for individuals working in all levels of education.[48]

6.3 Making Progress on the 40-40-20 Goal and the Equity Lens:

6.3.1 Diploma and Certificate Programs

The 40-40-20 goal includes a 40% segment that reflects some education beyond high school. This can include a variety of certificates and diplomas and allows students to train for professions without completing a four-year degree. Many of these programs lead to relatively high-paying jobs in areas such as health care, welding, plumbing, electricity, construction, computer programming

and horticulture. These opportunities are offered both through traditional public education and through private programs.

In 2014 HECC adopted approval standards for career and technical education programs with five components:[49]

- Need: evidence of need for the program
- Collaboration: programs developed through joint ventures and working relationships with industry, labor and workforce development partners
- Alignment: programs aligned with appropriate education, workforce development and economic development clusters
- Design: program procedures and methodologies
- Capacity: resources to carry out the program.

In addition to working with community colleges, HECC works through its Office of Private Postsecondary Education (OPPE) to oversee "the quality, integrity and diversity of private postsecondary education programs in Oregon." The Private Career Schools (PCS)section of OPPE provides "educational leadership, technical assistance, training and support to over 208 private career schools in Oregon."[50] Private career schools are regulated through Oregon Administrative Rule 715-045.[51] For a more detailed description of some of the private vocational opportunities in Oregon visit http://www.rwm.org/oregon/.

The Office of Degree Authorization (ODA) under the Office of Student Access and Completion of HECC is responsible for authorization of academic programs and degrees offered by degree-granting institutions. ODA also approves Exempt Status for schools. This includes religious exemptions for non-profit religious schools teaching theology or religious occupations, and for other non-profit independent schools that have operated under ODA successfully for five years.[52] Passed during the 2016 Legislative session, House Bill 4019 requires that certain non-profit schools must operate in Oregon for ten years rather than five to be exempt from state oversight.[53]

6.3.2 Increasing Awareness and Providing Support

Meeting the aspirations of the 40-40-20 goal and the equity lens will require that more non-traditional students achieve success in postsecondary education. The group includes members of ethnic minorities, students from families that have not previously attended college, low-income students, rural students, and adult learners. For many of these potential students, awareness that postsecondary education is even an option for them is the first step. A number of outreach programs have been established to encourage K-12 students in these groups to consider and prepare for college. At the state level, the Office of Student Access and Completion oversees the ASPIRE program (Access to Student Assistance Programs in Reach of Everyone). Starting with just 4 schools in 1998, it was expanded to 145 sites by 2013.[54]

> ASPIRE is a mentoring program that matches trained and supportive adult volunteer mentors with middle and high school students to develop a plan to help them meet their education goals beyond high school.[55]

The mentors work with students one-on-one, providing information about college and career options, admission requirements, and financial aid.

Local programs like those below also encourage college attendance for students who might not traditionally consider it:

Eastern Promise, a collaboration between the InterMountain Education Service District (IMESD), Eastern Oregon University, Blue Mountain and Treasure Valley community colleges, and 45 school districts in the eastern Oregon, seeks to provide opportunities for students to take college level courses and possibly receive college credit or certificates while still in high school. In addition, it

sponsors an outreach program, Academic Momentum, for 5th through 8th graders to "increase the college going culture" of the region.[56]

Southern Oregon University operates several outreach programs for Latino and Native American students to encourage future attendance at SOU.[57] SOU also recently launched the Jackson/Josephine County Pledge Program to create a lower cost, fast-track baccalaureate option for students within their primary service area of Jackson and Josephine Counties.[58]

Rogue Community College has several different bridge programs for which the college seeks local funding. For example, a Hispanic group in Jackson County has an outreach program targeting high school students with the Hispanic Outreach Leadership Academy. The students receive an intensive one-day program describing the ease of enrollment and what to expect in college. Once enrolled, students can receive additional counseling and work with the cohort of students from the program.

At Portland Community College, several programs reach out to students who otherwise might not consider college. Future Connect, supported by the PCC Foundation and the cities of Portland, Beaverton, and Hillsboro, provides scholarships to first generation and low-income students.

> Future Connect is a scholarship program which focuses on eliminating barriers to attending college, and provides on-going support throughout a student's time at PCC.

> Using scholarship money, career guidance and personal advising, Future Connect helps students build pathways to their futures.[59]

Retiring President Peter Angstadt explained that Rogue Community College has a mission to provide low-cost open access education. As part of its mission, RCC seeks out and supports those that need additional help to be college ready. RCC participates in the TRIO program, a federally funded system of educational opportunities. The program reaches out to students and has recruiters seeking to identify those who are first-in-family and/or experience other types of economic or cultural barriers. Beginning with eighth graders, the program continues through high school.

Once students are enrolled in college, a number of factors affect their chances for successful completion of a degree or certificate. Many students from traditionally underrepresented groups may not be as well prepared for college level work. The need for remedial courses that do not meet degree requirements lengthens the time needed for completion and the cost of achieving a degree. Community colleges have found that students who begin in these remedial classes are much less likely to complete a degree. To address this problem, colleges are experimenting with efforts to integrate some college level work into remedial classes. According to Patrick Crane, head of the Office of Community Colleges and Workforce Development, this co-requisite education seems to be helpful. Math is a particularly significant stumbling block. Colleges and HECC have been working on designing an alternative to the traditional college math requirement for students not in STEM (Science, Technology, Engineering, and Math) programs.

Representatives of the community colleges and universities interviewed for this report stress the need for good advisory support for students and a lack of adequate resources for this support.

Oregon State University President Ed Ray sees "demonstrating effective strategies and support mechanisms to significantly increase retention rates through graduation for undergraduates and graduate students, while eliminating achievement gaps" as one of the major challenges and opportunities facing his University. OSU is part of the eleven-member public university group, University Innovation Alliance, focusing on Pell Grant eligible students and working together to improve retention and eliminate achievement gaps. Tracking of students to catch problems and help with their solutions at the earliest opportunity is seen as very valuable. At OSU, education Advisory Board (EAB) software enables the university to identify at risk students early in their college career based on grades in their beginning courses. The provision of clear pathways to degrees is also important and potentially lessens time to completion. The 2015-2017 university

budget includes $30 million to help with programs to keep students on track for graduation. A September 2016 *Oregonian* article noted:

> At Portland State, the school hired 12 advisers this fall, a 31 percent increase from last year, to reach out to students who may be struggling. UO spent $1.3 million in grants on 136 students who were close to completing a degree but were struggling financially. OSU expanded programs to help students in their first two years, when they are most at risk of dropping out.[60]

Community colleges also have created programs to attract older part-time students and to support disadvantaged populations. Portland Community College Sylvania Campus President, Lisa Avery, points to the diversity of PCC students, with the student population reflecting the communities surrounding each of the four campuses. PCC is Oregon's largest higher education institution, addressing the needs of many adults and offering a variety of continuing educational opportunities. Dr. Avery stressed that PCC is developing introductory college success courses, and developing mechanisms to track and support student progress. She pointed out that development and support of these programs requires increases in staff of one to two positions per campus.

Adequate financial aid also increases the percentage of successful completion, since the cost of education often leads to student dropout or lengthened time to degree because students turn to employment to obtain the needed income. (See Chapter 8.)

CHAPTER 7. STUDENT PROGRESS AND OUTCOMES

> Governor Brown has set a goal that every Oregon student will graduate from high school with a plan for the future. That entails helping students envision high school graduation not as the finish line, but as a launch pad for the rest of their lives.

> This is where cross agency collaborations involving the Chief Education Office, the Oregon Department of Education, the Higher Education Coordinating Commission, the Employment Department, and industry are key. When all of the pieces come together we can powerfully create the conditions necessary to ensure each student reaches their full potential. And we know that the best return on our Oregon education investment is a high school graduate who has been accepted to college, enrolled in job training, or embarked on a career.[61]

Progress toward the 40-40-20 goal and reduced costs for students can be accelerated by various means, including providing access to college credits for high school students (dual credit), reverse transfer (providing a community college degree when students have transferred into 4-year college and completed associate's degree requirements), and credit for prior learning (by experience or examination, assessed to match with appropriate college-level course work).

7.1 Accelerated Learning

Accelerated learning comprises the processes by which students in high school can obtain college credit for their work and thereby facilitate the key transition from secondary to higher education. In many cases, they can obtain both high school and college credit. The most common forms of accelerated learning in Oregon are Advanced Placement (AP) and International Baccalaureate (IB) classes, Expanded Options, courses at a college, and dual credit.[62]

HECC has standards for high school-based accelerated learning, which are reviewed and updated for each school.[63]

Why promote accelerated learning? Students who enroll in college classes and earn credits while still in high school are said to have a higher rate of graduation, college participation, retention in both high school and college, and higher grade point averages (GPA).[64] Students from low socio-

economic backgrounds who earn six or more college credits are more likely to attain any college degree than those who do not.

Recent studies in Texas provide some evidence that students who take early college credits, including AP classes, concurrent enrollment, or dual credit showed a small to moderate but significant improvement in GPA than students who did not do so, when scores for the ACT college readiness test were controlled. The study did not report on percentage or time to graduation for the students.[65]

Another longer-term (six-year) study from Texas by Jobs for the Future (JFF) followed dual enrollment and non-dual enrollment students from a 2004 high school graduating class for six years after graduation. The study found that "overall, students who completed college courses through dual enrollment were significantly more likely to attend college, persist in college, and complete an associate's degree or higher within six years." These results were consistent across racial groups and income levels. This article also provides a review of earlier work in the field.[66]

7.1.1 Dual Credit

Dual credit refers to courses offered as part of the high school program and taught by high school teachers under the auspices of a college or university. HECC is now proposing that new standards be developed for new models, called "Sponsored Dual Credit" and "Assessment-based Learning Credit." Sponsored Dual Credit is sufficiently similar to the college/university course such that the student is described as "taking a course from the college or university", is enrolled in the college course, and is graded similarly to students in the college course. A faculty member from the sponsoring college or university oversees the orientation, training, and implementation by the high school teacher to ensure that the courses align with those of the sponsoring institution. The teachers are approved and authorized by the sponsoring institution in accordance with its own institution policies and procedures.[67]

A new accelerated learning program is assessment-based learning, which provides enhanced high school courses or activities at the high school, taught by high-school teachers, but not necessarily aligned with a particular course. It focuses on having a student attain specific college or university defined learning outcomes, which can provide credit for learning outside a particular college course.[68]

7.1.2 Credit for Prior Learning

Returning and adult students are able to accelerate their progress by receiving credit for prior learning once they are enrolled in a post-secondary institution. In HB 4059 (2012), HECC was charged to work with community college districts and other institutions of higher education to increase the number of students who receive academic credit for prior learning (CPL) that counts toward their major or towards a certificate, degree, or credential. In addition, the number and type of credits accepted for prior learning was to increase, always ensuring that credit is awarded only for high-level competencies.

Examples of CPL include credit by standard third-party exam, industry certifications, institutional challenge exams, military credit, portfolios, and professional licensure. Costs for these credits will belong to both the student and the institution, and funding strategies are being developed. The major cost involves assessment of the credits, and these assessments must be done by appropriately qualified faculty. A December 2015 report provides substantial information on prior learning, definitions of learning situations, and progress on the assessment of prior learning by several types of institutions. In addition, it also looks at the funding ramifications of each type of credit awarded.[69]

7.1.3 AP/IB

The Statewide Advanced Placement Policy was adopted in Senate Bill 342 in 2005, and updated each year since to reflect changes to the AP curricula. The Statewide International Baccalaureate Policy was adopted in January 2010 and first updated in 2014.

Each year, the HECC Statewide AP/IB Workgroup reviews the policy in light of curricular changes. Faculty on the Oregon public university and community college campuses review the changes and provide input for the statewide policy.[70]

7.2 Enrollment of Community College Students in Four-Year Institutions

Community colleges represent the important middle component of the state's 40-40-20 goal for higher educational achievement. In 2014-2015, they enrolled 307,503 students, but to attain the desired 40% of adults with bachelor's degrees, many of these students will need to transfer to four-year schools to complete their degree. Age distributions for 2014-2015 were 11% high school students, 20% traditional age (18-21), 31% mid-career (22-34), and 37% mid-career and later (over 35).[71]

For the fall of 2014, 43, 768 students entered public universities directly from high school and 32,166 transferred from another postsecondary institution.[72] That year, Oregon Community Colleges granted 12,460 Associate Degrees and 8,472 certificates and transfer modules.[73] Approximately half of state public university students from Oregon in recent years have transferred from an Oregon community college each year.[74] In 2014, 4385 Bachelor's degrees were awarded to students who started as CC transfers. HECC is considering this as s a new metric, which does not have prior data for comparison.[75]

7.3 Persistence and Graduation of Community College Transfers

Of the students who entered a four-year school in 2006 with a completed associate's degree (by no means representing all transfers), 61.7 % had completed a bachelor's degree in an additional three years and 77.8% had completed within six years. Dr. Kevin Ahern of OSU's biochemistry faculty commented that students entering with associate degrees were well prepared. Again, there is variability among institutions in transfer success to completion, with six-year rates above 80% at OSU, SOU, and UO; rates at the other schools range from 64% at OIT to 78% at PSU. This six-year rate may be compared to the six-year rate of freshmen entering the four-year schools in 2006, which was 60.5% for all freshmen, 72.8% for freshmen who persisted to the second year, and 81.8% for freshmen persisting to the third year, a status approximately equivalent to the Associate of Arts (AA) transfers. OSU and UO were well above 80%, while the other schools ranged from 66% to 75%.

It is interesting to note that PSU, SOU, and OSU graduated more transfer students than entering freshmen, even those persisting to the third year. For fields of high profile, such as STEM, transfer students from OCC make up an important percentage of successful graduates.

Institutional support for transfer programs involves articulation agreements and opportunities for students to enroll in community college (CC) and senior college concurrently. Students can then take upper-division courses at the four-year campus along with lower division courses in CC. A single enrollment form, integrated financial aid, and defined pathways for transfer are available. In addition, transfer is facilitated by the Oregon Transfer (OT) Module, which provides 45 credits in general education courses, transferable to any other institution. The two-year equivalent is the AA/OT module, after 90 credits, which is also transferable directly.

After a student transfers to a four-year school and completes the requirements for an associate's degree, they can receive such a degree through reverse transfer. This also provides the CC with

another completed graduate, which does not happen otherwise. This process is particularly useful in STEM fields, so long as the community college courses properly prepare the student with the math, science and other requirements they will need to progress. The university receives credit for completion when the student graduates with a four-year degree. If for some reason the student fails to complete the four-year degree, they still have a two-year degree that carries weight in the search for employment.

In addition, supportive services for students--such as mentoring programs, transfer student orientations, undergraduate research programs, activities that engage faculty and students, and having representatives from four-year universities go to community colleges and talk to students—all help increase the success of transfer students.

CHAPTER 8. STUDENT FINANCIAL AID

Under the umbrella of HECC, the Office of Student Access and Completion (OSAC) administers numerous grants, scholarships, mentoring, and financial aid outreach programs for Oregon students. OSAC's forerunner, the State Scholarship Commission was established by the Legislature in 1959. Authority to solicit and administer privately funded as well as state supported scholarships was also granted at this time. The original commission was renamed the Oregon Student Assistance Commission in 1999, and in 2012 the Legislature gave it its current name and moved its governance to HECC. OSAC's website provides information and applications for grants and more than 475 scholarship opportunities. In addition to state funded programs, it awards more than $18 million dollars in scholarships annually, thanks to private donors, civic organizations, employers, and foundations such as the Ford Family Foundation and The Oregon Community Foundation, OSAC also administers grant programs for children of deceased or disabled safety officers, student parents and foster youth.[76]

8.1 Oregon Opportunity Grant

The largest state funded grant program in Oregon is the Oregon Opportunity Grant (OOG). Originally created by the Legislature in 1971 as the Oregon Need Grant, the program's awards were based entirely on student's financial need and were available for Oregon community colleges, and public and private four-year institutions. Initially available only to first and second year students, the first awards to upper-division students occurred in 1977. Over the years, the Legislature adopted a number of additional grant programs, but in 1993, the need to reduce general fund expenditures led Oregon State Scholarship Commission, the predecessor of OSAC, to request that all funds be directed to the Need Grant in order to maintain it at the highest possible level.

Funding for the Oregon Need grant, renamed the Oregon Opportunity Grant in 1999, has varied in response to economic fluctuations. Most of its funding has come from the General Fund. Federal matching funds were available between 1975 and 2003. Several attempts have been made to establish a more consistent funding source, including lottery funds (Education Stability Fund unfunded by the Legislature in 2003) and through a constitutional amendment to establish a permanent Student Opportunity Fund based on bonding, which did not pass. Currently, the OOG is dependent solely on appropriations from the General Fund.

To be eligible for the OOG, applicants must file the Free Application for Federal Student Aid (FAFSA) and have Pell Grant Eligibility. The maximum size of the grant awarded has varied through most of its history. Community college students received the lowest maximum grant, Oregon public university students a somewhat larger maximum, and private college and university students the largest grants. Awards were based on a percentage of the costs of attendance, and contributions from family, and federal assistance such as Pell grants and tax credits figured into the expected need. Awards were made until the funds for each sector were exhausted. In 2012, the OOG became

a flat grant, originally $1800 for CC's and $1950 for 4-year institutions. For the 2016-17, academic year grants of $2250 became available for full-time, full-year attendance at any Oregon-based postsecondary institution.[77] For more detail on the history of the Oregon Opportunity Grant and OSAC see: http://www.oregonstudentaid.gov/oog-history.aspx.

Among its priorities for the 2015-2017 biennium, the HECC sought to expand and redesign the OOG. Approximately 64% of OOG recipients at Oregon public universities graduate. The OOG has been seriously underfunded. Only 23.5% of eligible students received grants, and there was no mechanism for prioritizing the funds. Grants were awarded on a first-come first-serve basis.

The 2015 Legislature responded to HECC's concerns, appropriating $140.9 million for the biennium, an increase of 23.6%. HECC estimates that the augmented OOG will be able to serve an additional 16,000 students. In addition, HB 2407 amended existing statutes to provide for greater stability for students by guaranteeing a renewal of the grant if requirements established by the commission are met by the student, and application is made in a timely manner. Also, HECC is authorized to prioritize the award to those in greatest need or to fulfill equity requirements when funding is insufficient to grant awards to all applicants. Grants will be awarded based on the federally calculated Expected Family Contribution (EFC), starting with EFCs of $0. The OSAC website warns that some previous OOG recipients may not receive a grant if they have a relatively high EFC.[78]

In spite of the 2015-2017 increase and efforts to reach the neediest, the Opportunity Grant is still seriously underfunded when compared to efforts in other states. According to 2013-2014 data, Oregon ranked 32nd in the nation for student grant dollars per full-time equivalent (FTE) undergraduate at $323.28 per FTE compared to a national average of $705.27. At its May 2016 meeting, the HECC Funding and Achievement subcommittee recommended an increase in award size to $2400 and funding of $189,591,116 for the 2017-2019 biennium.[79]

8.2 Oregon Promise

In 2015, Senate bill 81 established *Oregon Promise*, appropriating $10 million for tuition payments "for students who graduated (or the equivalent) from an Oregon high school no more than six months prior to attending and pursuing a certificate or degree at one of Oregon's 17 community colleges."[80] The grants are administered by the Office of Student Access and Completion (OSAC) in cooperation with the Office of Community Colleges and Workforce Development and became available for the 2016-17 academic year. The program is expected to serve between 4,000 and 6,000 students a year if funding is available.

Eligible community college programs include one-year programs for students transferring to another postsecondary institution, associate degrees, and programs in career and technical education. The award is "last dollar", based on average community college tuition for up to 12 -14 credits. Students must complete the federal FAFSA each year and accept all state and federal grant aid offered. To ensure aid to the neediest students whose tuition might be fully covered by federal grant aid, the minimum Oregon Promise Grant is $1000.

Students must be enrolled at least half time (6-11 credits) and meet certain eligibility standards if the grant is to be continued for a second year. Continuation of the funding was not guaranteed by the Legislature. To cover the second year for the first cohort and provide for a third cohort in 2018 will require $40 million for the 2017-2019 biennium.[81] In contrast to this funding uncertainty, the Tennessee program on which Oregon Promise was modeled received a $361.5 million endowment from Tennessee Lottery Funds.[82]

With its limited eligibility requirements and low and uncertain level of funding, Oregon Promise serves a very small portion of community college students. Statewide, only 20.1% of students fall into the "traditional" 18-21-year-old group. Even with this limitation, Bob Brew, OSAC executive

director, sees the program as a good opportunity for students to discover whether college is right for them. The age distribution may shift younger in community colleges if response to the program parallels that in Tennessee. According to an *Oregonian* article about the Tennessee program,

> For the colleges, it's been a seismic shift toward serving a different population. Campuses are skewing younger, and students are asking for activities and clubs more common on four-year campuses.[83]

8.3 Pay It Forward

In 2015, HB 2662, which would have authorized a trial of the Pay It Forward plan, died in legislative committee. The concept arose initially from a student project at Portland State University. Supporters felt that such a program would give many students easier access to postsecondary education by freeing them from large student loans with potentially high interest rates, the possibility of default, and the inability to discharge this debt through bankruptcy. Students would be able to attend postsecondary institutions free of charge until after a grace period upon completion of their studies. After that time, students would be assessed a percentage of their earnings each year for a period of up to 20 years. The HECC workgroup, required by HB3472, saw three specific advantages:

- The income-based payment model is more "user-friendly" to recent graduates;
- The program could be, over the long term, self-sustaining; and
- Pay It Forward eases the financial burden on middle-income students who are potentially ineligible for most need-based financial aid.[84]

Others felt that the program, as presented in HB 2662, had a number of problems. Kate Peterson, Assistant Provost for Enrollment Management, testifying before the March 5,2015 meeting of the House Higher Education, Innovation and Workforce Development Committee, cited several objections. Among them were the following:

- "A student's "contributions" to the fund upon graduation are not limited to the amount of tuition assistance received plus interest, but rather are based on a set percentage of the student's annual earnings." This could result in a significant probability of paying "what amounts to extremely high interest rates."
- The program did not offer the opportunity to accelerate payments, buy out of the program, or consolidate debt.
- The bill did not address the impact if students use both PIF and federal loan system.
- Administration would be difficult and expensive.[85]

8.4 Other Financial Aid Programs

In addition to the Oregon Opportunity Grant and other aid programs administered by OSAC, the individual universities have established their own programs to help with affordability. A few examples follow.

The University of Oregon established PathwayOregon, a program for Oregon's lower income students. The program promises to cover four years of tuition and fees for eligible Oregon residents. It also gives these students access to academic support and career guidance. In 2013, the sophomore retention rate of students in the program was over 86%. As of the fall of 2013, students with a 3.4 GPA or better and who are eligible for a Pell Grant are automatically enrolled in PathwayOregon. In addition, the university offers a number of merit based scholarships.[86]

In a presentation to the 2015 Joint Ways and Means Subcommittee on Education, Western Oregon University cited a number of affordability initiatives:[87]

- Fee remissions – over $3 million awarded in 2014-2015

- Western Tuition Promise, a program that guarantees no tuition increases for 4 years. The initial tuition is somewhat higher than that for students not selecting this option, but David McDonald, associate provost at WOU, estimated that students saved about $1000 dollars over the four years.
- Textbook savings program providing for rental of textbooks and other classroom needs such as scientific calculators at 30 to 35 percent of the cost of purchase
- Willamette Promise (2014) provides dual credit with area high schools

Oregon State University created its Bridge to Success program in 2008-2009.[88]

> OSU's Bridge to Success Program is a financial aid initiative that in its first school year, 2008-09, allowed more than 10 percent of the Oregonian students who attend OSU to do so free of charge. The program, which is the largest of its kind announced in Oregon, covers standard tuition and fee costs for more than 3,000 in-state students. (Differential tuition charges are not covered for additional charges based on a student's program of study).

Portland State University is developing a "Four Years Free" program to attract more low-income freshman to the university. Students must have at least a 3.4 grade-point average and qualify for and accept federal and state aid grants for low-income students.

> "A central goal of the Four Years Free program is to give high school educators and guidance counselors an important financial aid tool they can use to create an incentive for their students, starting in 9th grade, to get good grades so they can afford to go to college at PSU," officials said in a statement.[89]

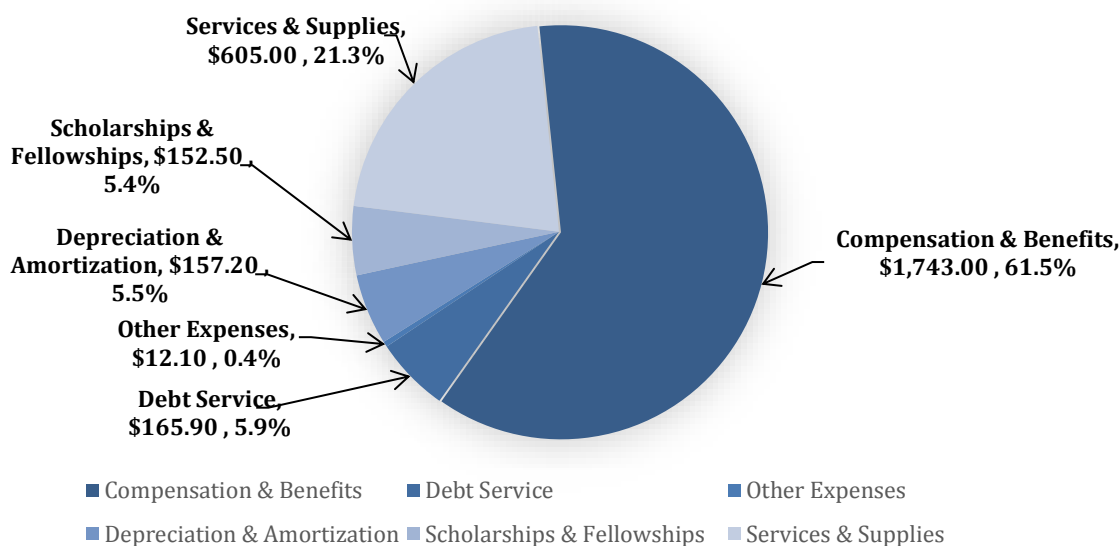## CHAPTER 9. STATE FUNDING OF POSTSECONDARY EDUCATION

In the 1987–89 biennium, the state supported the Oregon University System (OUS) with 15.3% of general fund dollars. By the 2013-15 biennium, this support had dropped to 4.7%. Oregon currently ranks 45th in the nation in support per FTE (full-time equivalent student) for its public universities.[90] This has led to large tuition increases, making higher education much more expensive for students.[91] In 2007-09, the state increased its investment in the university system providing $693 million in funding. At that time the system had 71,913 full-time students and tuition averaged $5,273.

With the advent of the recession, funding had dropped to $521 million plus $40 million in tuition offset for the 2013-15 biennium (estimated 88,599 full-time students). HECC, in its 2015 Presidents' Request, asked the Legislature to provide $755 million, a return to the 2007 level of funding plus $62 million for 13-15 tuition replacement.[92] Ultimately, the Legislature appropriated $665 million for the Public University Support Fund. Oregon's state investment increased by 16.2% between 2015 and 2016, according to Grapevine, a joint project of the Center for the Study of Education Policy at Illinois State University and the State Higher Education Executive Officers (SHEEO). This increase compared well to the national average of 4.1%.[93]

In response, Ben Cannon, Executive Director of the HECC, expressed optimism:

> The State of Oregon's recent investment in public higher education represents an important turning point for our public universities and community colleges, following years of state disinvestment and enrollment increases. While the Grapevine analysis does not take into account state funding per student -– where Oregon has ranked among the lowest nationally -– this year's funding increase will translate into to degrees, certificates, and promising futures for thousands more Oregon students.[94]

Use of Funds by Natural Classification
(in millions)

- Services & Supplies, $605.00 , 21.3%
- Scholarships & Fellowships, $152.50 , 5.4%
- Depreciation & Amortization, $157.20 , 5.5%
- Other Expenses, $12.10 , 0.4%
- Debt Service, $165.90 , 5.9%
- Compensation & Benefits, $1,743.00 , 61.5%

Legend:
- Compensation & Benefits
- Debt Service
- Other Expenses
- Depreciation & Amortization
- Scholarships & Fellowships
- Services & Supplies

The graphic above shows the percentages of funds expended in various aspect of university budget classifications for the fiscal year 2014-15 (dollars in millions; total $2,836.7 million).[95]

Oregon's 17 community colleges have also seen large changes in level of state support. In 1989, property taxes provided about 50% of revenue, with the state general fund contributing about 30% and tuition 20%. The property tax contribution dropped to 22% in 1996 and has remained between 22 and 24 % since that time. General fund revenue reached a high between 1996 and 1998 at about 55%. This began dropping in 2000 and reached a low of 29% in 2012-2013. As with the universities, community college tuition has risen significantly to 47% of revenue.[96] The average tuition for a full-time student in 2014-15 rose to $4,638, significantly higher than the western states (WICHE) average of $3,469.[97] As they had for the University Support Fund, the 2015 Legislature increased support for the Community College Support Fund, appropriating $555.5 million. Key investments for the 2015-2017 biennium can be seen in Appendix 6.[98]

9.1 Student Success and Completion Model

The distribution of funding to various institutions and development of rules for this distribution are among HECC's legislated responsibilities. Under ORS 351.735(3)(d):

> The Higher Education Coordinating Commission shall:
>
> (d) Adopt rules governing the distribution of appropriations from the Legislative Assembly to community colleges, public universities listed in ORS 352.002 and student access programs. These rules must be based on allocation formulas developed in consultation with the state's community colleges and public universities as appropriate.

Prior to the 2015-2016 academic year, funds for universities were awarded through a Resource Allocation Model which was based on two primary components: line items (29%) (such as Regional Support, Research, Public Service) and enrollment (70%). Only a small amount was reserved as an incentive for student success allocations. To better encourage university efforts to increase rates of completion, HECC set a goal to develop a Student Success and Completion Model (SSCM), a type of outcomes-based funding. A HECC committee, including senior financial, academic and student affairs representatives from each public university as well as student and faculty leadership,

developed the method that was used for the first time for the 2015-2016 academic year.[99] HECC Executive Director, Ben Cannon, cited four aspects of the new method. It is:

- Linked to state educational attainment goals
- Directing state investment to completions (including course completions, degree and certificate completions)
- Designed to reward and reinforce institutional investments in student success and support services
- Focused on achieving equity goals[100]

The new SSCM, developed between June 2014 and February 2015, has three major components:

- Mission Differentiation Funding supporting regional, research and public service missions. This factor recognizes the higher cost mission of the regional and technical universities and the OSU Cascade campus, research for key economic development needs of the state, and funding for non-instructional activities.
- Activity-Based Funding investing in credit hour enrollment of Oregon resident students
- Completion Funding focusing investment on degree and certificate completion of Oregon resident students with emphasis on underrepresented populations. All levels of degrees are included and cost adjustments are made reflecting program duration and type and for transfer students. Extra weight is given for underrepresented populations and areas of critical need (such as STEM, healthcare, bilingual education).[101]

HECC proposes transition mechanisms as the state moves to SSCM, with a relatively small portion of total funding based on completions initially, but eventually growing to 60% of the allocation formula. A rolling 3-year average will be used to reduce unpredictability of funding. Early years will have a stop-gap mechanism to prevent loss of funding and guarantee a first year increase of at least 4.5%. A stop-gain measure prevents an institution from an abnormally large increase in excess of a predetermined threshold compared to the prior year. The model builds in evaluation timetables. Every two years, stakeholders will examine such factors as definitions and weighting and ensure that unintended consequences are understood and accounted for. Every six years HECC will undertake a "more comprehensive process to ensure that the Model reflects the needs of institutions and priority of the state in directing resources."[102]

HECC's 2016-2020 Strategic Plan states:

> We believe the SSCM will help enable universities to look at investments in student support as revenue "generators" rather than as unreimbursed expenses; much as they look at investments in recruitment and enrollment efforts today.[103]

Opponents of the new distribution method cite the danger of lowered quality of education if schools compete for funding based on graduation rates. They ask whether instructors will inflate grades or weaken course work in order to increase retention. Some faculty have expressed concern that an unrealistic burden has been placed on them to assure student success.

It will take time to determine the results of the SSCM method for Oregon Universities. A 2012 report from the Columbia University Teachers College noted that about half of the states that had adopted performance funding later abandoned it. Among the factors cited by higher education institutions in opposition to such funding methods were lack of consultation, invalid indicators, and loss of institutional autonomy. The downturn of state finances in the early 2000s seemed to be another important reason for abandonment. The study saw little indication that this method of funding led to improvement in outcomes, and suggested a possible negative effect on community colleges.[104]

Recent years have seen a renewed national interest in outcomes-based funding (OBF). A 2013 report from the National Center for Higher Education Management Systems (NCHEMS), *Outcomes-Based Funding: The Wave of Implementation[105],* suggests important factors in designing new OBF

programs. Ben Cannon, testifying to the House Committee on Higher Education, Innovation and Workforce development, cited five of these principles:[106]

- Begin at the beginning
- Measure what you want to get
- Fund what you measure
- Understand (and appreciate) the angst
- Recognize performance funding as one piece of the puzzle

In most of the earlier programs, however, OBF accounted for very small percentages of total funding. The NCHEMS report suggested that the pool must be big enough to command attention, and that the smaller the state contribution to institutions, the larger the percentage of funding should be directed to outcomes.

Efforts to develop an Outcomes Based Funding method for community colleges in Oregon have not been successful so far, and state funding continues to be based largely on enrollments. Because of the many different roles played by community colleges, it is difficult to develop clear measures of progress. President Lisa Avery of Portland Community College Sylvania expressed a belief that an OBF method would eventually apply to community colleges, but that the metrics need to be developed by the colleges themselves. HECC's Strategic Plan calls for consideration of adjustments to the current enrollment based funding, including weighting for underrepresented students and higher-cost higher-demand programs and "incorporating student outcomes, such as momentum points and certificate/degree completion."[107] (Momentum points are measurable performance milestones or educational attainments.)

CHAPTER 10. ASPECTS OF POSTSECONDARY EDUCATION OF CURRENT INTEREST

10.1 Online Learning

Online or distance learning is learning offered through the internet or, in the past, by mail. Courses can be taken from anywhere internet access is available, offering the flexibility of designing a learning program that fits with each student's life away from the traditional classroom. Hybrid courses offer the opportunity for both online materials and classroom experience. The hybrid model is often used for science courses with labs.

The basic findings of the *2015 Online Report Card –Tracking Online Education in the United States* by the Babson Survey Research Group included these basic findings:

- A year-to-year 3.9% increase in the number of distance education students, up from the 3.7% rate recorded last year.
- More than one in four students (28%) now take at least one distance education course (a total of 5,828,826 students, a year-to-year increase of 217,275).
- The total of 5.8 million fall 2014 distance education students is composed of 2.85 million taking all of their courses at a distance and 2.97 million taking some, but not all, distance courses.
- Public institutions command the largest portion of distance education students, with 72.7% of all undergraduate and 38.7% of all graduate-level distance students.
- The proportion of chief academic leaders that say online learning is critical to their long-term strategy fell from 70.8% last year to 63.3% this year.
- The percent of academic leaders rating learning outcomes in online education as the same or superior to those in face-to-face instruction is now at 71.4%.

- Only 29.1% of academic leaders report that their faculty accept the "value and legitimacy of online education." Among schools with the largest distance enrollments, 60.1% report faculty acceptance, while only 11.6% of the schools with no distance enrollments do so.[108]

Consensus is not complete on whether on-campus and online learning experiences are comparable and whether students can successfully complete all areas of study though distance learning. Distance learning provides major advantages in scheduling, offers equivalent course materials, and requires equal study time for students. Group projects and discussion boards allow contact with peers and professors. Technology skills are required for utilizing computer programming. Different learning skills may be required.[109] Programs requiring physical laboratory work (such as engineering, chemistry, medical programs and other hard sciences) may be more suited to on campus learning. There remain negative stereotypes for online learning; however, these seem to be decreasing. The distance programs are more accepted for older students. Students need to research their area of interest and the job market to determine the acceptability of the programs.[110]

Most higher education institutions in Oregon offer distance learning. For additional university detail, see Appendix 4.

10.2 STEM Education and Workforce Development

Developing the required workforce in Science, Technology, Engineering, and Mathematics (STEM) is a nationwide issue.

> "We'll reward schools that develop new partnerships with colleges and employers, and create classes that focus on science, technology, engineering, and math – the skills today's employers are looking for to fill jobs right now and in the future." President Barack Obama[111]

In 2016, the National Academies of convened a workshop to consider several broad areas relating to STEM workforce development, including new and innovative pathways for university teaching, understanding the role of K-12 education in preparing the future workforce, encouraging stronger communication between business and higher education, and recognizing that many non-STEM careers still require some level of STEM capability. The outcomes of this project will affect federal funding strategies for STEM education, as well as efforts on the state level.[112]

Changes in the approach and content of K-12 STEM instruction, called the Next Generation Science Standards (NGSS), were developed over several years and published in 2012. The standards were to be adopted individually by the states. Oregon has adopted them.[113]

The new standards focus on asking questions (science) and solving problems (engineering), using models, planning and carrying out experimentation, analyzing data, and communicating of results. They also integrate several areas of science and engineering and make connections between and among individual fields.[114]

Adoption of the NGSS may affect teaching of STEM in higher education as well, since students will have been exposed to active learning and investigation before they get to college and will expect to continue on this pathway.

In Oregon, there are many STEM jobs that cannot be filled locally; this may be because of poor pre-college preparation.

> Business leaders in Oregon cannot find the science, technology, engineering and mathematics (STEM) talent they need to stay competitive. Students' lagging performance in K–12 is a critical reason why. The good news is that the nation's most effective STEM education programs can help turn the tide. Oregon students have made small gains in math over the past decade, and few eighth graders have teachers with undergraduate majors in

the subject. Elementary students spend little time on science, and too many Oregon teachers lack access to science facilities and resources.[115]

There are strong economic and equity reasons for improving STEM education for all students in Oregon.

- Females and minorities make up more than half of Oregon's population, but are much less likely to earn STEM degrees or become STEM professionals.
- Between 2014 and 2024 in Oregon, STEM jobs will grow by an estimated 17%. Of these, 20% will be in computing, 14% in engineering, and 24% in advanced manufacturing.[116]
- Median earnings in Oregon STEM jobs are $38.98 per hour, and in other jobs they are $18.34 per hour.[117]

The STEM Investment Council, established by HB 2636 (2013) is charged with creating a state strategic plan, advancing STEM education by doubling the number of students proficient in math and science in the 4th and 8th grades, and doubling the post-secondary STEM degrees and certificates by 2025.[118]

An update of the state efforts across these areas can be found in the STEM and CTE (Career and Technical Education) Update of April 2016. https://www.oregon.gov/HigherEd/Documents/HECC/2016 Full Commission Meetings/04_Apr-14-16/JOINT6.0CTESTEMPanelHECCandSBE.pdf

To reach these goals, institutions will need to provide recruitment and retention programs, including advising, mentoring, counseling, tutoring services, community building, and opportunities for research for college and universities. A new Oregon Talent Council, made up of business representatives, will work with the universities to couple learning and specific workforce development.[119]

Significant progress has been made on several campuses in achieving these changes. In the fall of 2009, OSU and PSU joined with two schools in Washington and one in Idaho to launch the Pacific Northwest Louis Stokes Alliance for Minority Participation (PNW LSAMP), funded by the National Science Foundation (NSF).

> The alliance has brought together educators and advocates from science centers, pre-college programs, community colleges and four-year institutions to leverage their resources and existing relationships to increase underrepresented minority (URM) participation in science, technology, engineering and mathematics (STEM) majors. As the PNW alliance enters its seventh year, the impact of this collaboration on broadening participation in STEM, institutional transformation and economic development in the three-state region has been substantial.[120]

Enrollments and degrees granted to URM in STEM fields have increased by 74% and 89% respectively since 2009. Now working with community college partners, PSU and OSU have increased the research opportunities and transfer potential for students to achieve their goals of a bachelor's degree in STEM, and to prepare for further advanced work and employment in the field. In addition, this program has been leveraged at PSU with the Howard Hughes Medical Institute grant program and the BUILD-EXITO program funded by the National Institutes of Health to provide complete services to underserved students from their last years in high school through the bachelor's degree in STEM, and on to post-graduate study and careers.[121]

In 2016 the faculty at PSU approved the formation of a STEM Institute to oversee these programs and assure that students are provided with the support, community resources, and opportunities that are necessary.

At OSU, the STEM Leaders program, also funded by the NSF, provides diverse undergraduates with orientation, workshops, peer mentoring, and research opportunities. OSU also provides summer opportunities for high school students through their STEM Academy, which encourages students to prepare for college through classes, workshops, and mentoring programs. The Oregon Coast STEM

Hub provides opportunities for students interested in marine science to carry out summer research and prepare for college.[122]

Through HB 3072 (2015), $2 million in competitive grant funding was provided to five community colleges, OSU, OHSU, OIT, and WOU for activities related to STEM education and activities for underrepresented and underserved students, leading to high-wage and high-demand jobs. Through this grant, OSU is developing the Oregon Alliance for Minority Participation (OR-AMP) Center for Excellence. Partners in this project include WOU, UO, and several additional institutions. The Center for Excellence provides leadership and shares best practices and resources to build a foundation for a statewide alliance of independent state universities, working to better serve and retain URM in STEM majors.[123]

At UO, the STEM CORE (Careers through Outreach, Research and Education) initiative brings together UO faculty with other educators, industry and government partners to provide outreach and expertise to public K-12 schools and community colleges for improving instruction, preparing teachers, and providing students at all grade levels with appropriate participation in STEM.[124]

10.3 Role of Research

Research, which is funded by private and public grants and contracts, is a component of all of Oregon's public universities and many community colleges. The HECC Strategic Plan of 2016-2020 recognizes that researchers are important contributors to Oregon's economic and scientific progress, recently spinning off increasing numbers of new companies that generate licensing revenue, jobs, and other benefits. Research is also important in enhancing learning experiences and training of new scientists and engineers at all levels, from high school through Ph.D.

Although the federal government is the major sponsor of research, state funding contains a number of line-item provisions for science and technology, and partners with local industry and business. HECC proposes that in the next two Oregon Legislature budget rounds they will develop a more logical structure and rationale for state support of research.[125]

The universities' role in research in the United States goes back to the Morrill Act of 1862, which granted lands to the states on condition that the proceeds of sale of the land were to be used to establish (land grant) colleges that would teach practical science, primarily agriculture and mechanical sciences. The faculty members were expected to conduct research in their specialty areas and disseminate the results of their research to farmers.[126] Oregon State University, established in 1868, is Oregon's land grant university.

During the latter half of the 19th century, more universities took on a research role. However, prior to World War II, private industry dominated the research areas, accounting for 67% of the expenditures in 1940.[127] Private industry relied primarily on basic research from European sources as the foundation for applied research and development. State university research funding was provided mainly by state governments. During WWII, more university scientists were brought in to do government research.

At the close of the war, the federal government determined that the United States needed to provide its own basic research. The National Research Defense Council chaired by Vannevar Bush (formerly from MIT) issued a report called *Science – The Endless Frontier* (the Bush or SEF report), which contained four basic recommendations that were important concepts for science policy in the United States:

> First, SEF advanced the proposition that the proper concern of US science policy ought to be the support, as opposed to the utilization, of science, except to fulfill its own constitutional responsibilities such as, most obviously, national defense.

> Second, it advanced the proposition that basic research ought to be the principal focus of federal support for science, again with the exception of national defense.

Third, it argued that mechanisms for the support of research must be consistent with the norms of the practitioners of that research who would, of course, be its direct beneficiaries.

The fourth proposition, although not articulated explicitly, followed as a logical consequence of these three and has had the most enduring effect on the evolution of science policy in the United States. By arguing for the primacy of basic research, SEF suggested that universities, as the principal sites for the conduct of basic research and the exclusive sites for graduate and post-graduate education, literally defined the national research system as it exists in the United States. Prior to World War II, the nation's research universities were usually thought of as being on the periphery of the US scientific enterprise. The Bush report argued, by implication, that they should constitute its core.[128]

The National Science Foundation was established to oversee direction and funding for the federal government. From 1950 to 1975, government spending for research continued to expand. Since 1975, government spending has decreased and industry share has grown.[129]

- Research and Development (R&D) performed in the United States totaled $427.8 billion (current dollars) in 2011, $435.3 billion in 2012, and $456.1 billion in 2013.
- In 2008, just ahead of the onset of the main economic effects of the national/international financial crisis and the Great Recession, U.S. R&D totaled $407.0 billion.
- The total of U.S. R&D performance returned to current dollar increases in 2011, 2012, and 2013.
- The business sector itself provided $297.3 billion of funding for R&D in 2013, or 65% of the U.S. total, most of which supported R&D performed by business.
- The federal government was the second-largest funder of U.S. R&D, accounting for an estimated $121.8 billion, or 27% of U.S. total R&D performance in 2013.
- Universities and colleges historically have been the main performers of U.S. basic research, and they accounted for about 51% of all U.S. basic research in 2013.
- The federal government remained the largest funder of basic research, accounting for about 47% of all such funding in 2013.[130]

Effective support of university research requires a heavy dose of federal funding, not just state funding. While research is an integral part of what goes on at American universities, and a necessary complement to graduate instruction, universities also play an important role as educators of industrial scientists, engineers, and entrepreneurs.[131]

Research is a component of all of Oregon's public universities. Grants support research and innovation in critical areas for Oregon and the nation – from clean energy to nanotechnologies – and lead to start-up companies, in turn, creating more jobs and spurring economic growth in communities across the state. Funded research also provides in-the-field, hands-on research experiences for undergraduate and graduate students, making them highly qualified to fill important roles in Oregon's businesses and industries when they enter the workforce.

The bulk of research funding goes to Oregon State University, University of Oregon and Oregon Health and Science University (OHSU). Portland State University is seeing a growing research function supporting the urban environment, its incubator business program, and in partnership with OHSU.

For more information on specific university research, see Appendix 5.

10.4 Athletics in Higher Education

According to an article in *The Oregonian*, the University of Oregon was the top university in revenue ($196M) from athletic programs in 2013-14. However, a significant portion of that revenue, "$95 million more specifically, stems from in-kind facility gifts — also known as the price tag of the

Hatfield-Dowlin football complex, which debuted in 2013 and was largely underwritten by Nike co-founder Phil Knight and his wife, Penny."[132]

After adjustments for other unusable revenues, a more accurate figure in revenue is around $99.1M compared to expenses of $98.8M. Expenses include $36M in staff salaries and $9M in scholarships. Revenue sources include ticket sales, subsidies, state support, student fees, and donations. Football is greatest revenue generator, and a post season game adds significantly to revenue. UO was one of 24 athletic departments nationally that met the National Collegiate Athletic Association (NCAA) definition of self-sufficient.

Oregon State ranked 50th nationally with a revenue of $63M.[133]

Oregon college athletic programs receive funding from the Sports Lottery Account. The funding, representing 1% of the lottery funding, is distributed as described in ORS 471.543: 88% is distributed to athletic programs and 12% to scholarships. The amount varies from year to year and there is a specified distribution program for different universities.

> Seventy percent of the revenues in the fund shall be used to fund nonrevenue producing sports and 30 percent shall be used for revenue producing sports. Of the total amount available in the fund, at least 50 percent shall be made available for women's athletics.[134]

There can be multiple benefits from an intercollegiate athletic program. For example, the 2014 data from the NCAA indicates that Division II athletes graduate at higher rates than other students (55% and 48% respectively).[135] Other often cited benefits include increases in applications and fund raising. In an article for *Business Officer* magazine, Robert J. Sternberg of Oklahoma State University provides a long list of the benefits for university athletes and universities, including leadership development, campus spirit, pride and loyalty, memories, encouraging fitness by providing facilities and supporting nutrition and physical exercise, recruitment, stress relief and pro-social behavior, relationships with the community, alumni involvement and branding. for the university.[136]

A May 2004 study and report prepared for the Knight Foundation found both benefits and concerns and summarizes the situation:

> To observe that the reward structure in big-time college athletics gives rise to costly positional arms races is in no way to deny that athletic programs generate numerous real benefits to the institutions that sponsor them....

> For policy purposes at the collective level, however, the important point is that each and every one of these benefits would occur with equal measure if every institution were to reduce its expenditures on big-time college athletics by half. Any institution that made such a cutback unilaterally would substantially increase its risk of fielding consistently losing teams. But if all institutions cut back in tandem, competitive balance would be maintained....

> The most forceful conclusion that can be drawn about the indirect effects of athletic success is that they are small at best when viewed from the perspective of any individual institution. Alumni donations and applications for admission sometimes rise in the wake of conspicuously successful seasons at a small number of institutions, but such increases are likely to be both small and transitory. More to the point, the empirical literature provides not a shred of evidence to suggest that an across-the-board cutback in spending on athletics would reduce either donations by alumni or applications by prospective students.[137]

11.1 Early Responses to New Governance Structure

As of the publication of this report in 2016, the changes to Oregon's public postsecondary governance structure are in their early stages. The new independent boards of the three large universities began to operate in July 2014, while the four smaller universities operated under their new boards for the first time during the 2015-2016 session. The consensus is that the boards have worked very well so far, but it will take some time, probably at least a decade, to evaluate their results.

Leaders at the universities cite the advantages of a governing structure with close relationships to the particular needs of each school. Faculty, staff, and students all have greater opportunities for input to decision making. This increased access has generally been positive, but can at times lead to problems. Activists have disrupted several meetings of the Portland State University board. Christine Vernier, a member of the Board of Portland State University, said that student issues are taking up a lot of time, but that the Board would like to be a bridge with the students, to take some pressure off the administration. President Wiewel of PSU noted that the boards give the universities an independent voice and the ability to lobby independently or as a group. He also appreciates the universities' ability to "pursue avenues that make sense for them."[138]

The response to HECC's role has been mixed. Christine Vernier said,

> Sometimes it is not clear where Board and HECC responsibilities start and stop. A major concern of HECC is that there not be a lot of overlap in programs. They approve all new programs, after the campuses approve them. The Board has been working mostly on local issues and can deal with them more efficiently than before.

An *Oregonian* article noted that President Ray of OSU, President Wiewel of PSU and others are "concerned that the statewide Higher Education Coordinating Commission is being too aggressive in trying to regulate and oversee the universities."[139] Ben Cannon, Executive Director of HECC, said he would "push back very, very hard against that perception." Speaking before the House Committee on Higher Education and Workforce Development on March 2, 2016, Cannon said:[140]

> With the dissolution of the Oregon University System and the creation of HECC, we did set in motion some…centrifugal forces -- spinning out of our universities at least. And that, I think, can do a lot of good for those universities and for students in Oregon, but also creates certain risks and challenges for students in Oregon and state policy makers in Oregon who are looking to make efficient and impactful investments and in policy for higher education. The autonomy, again, can be and has been a very positive force for institutions, their success and for students. But our role in helping maintain a coordinated system is also very, very important for students -- the pathways we are responsible for creating, the coordination and sort of refining of the system is critical. And I do worry that we've sort of unleashed forces that will be or could be under pressure to accelerate.

Asked what his greatest fear was, Cannon added:

> But I think we need to be very careful and thoughtful, and I worry that there will come a time – maybe it will take a generation--where we will have gone so far down the autonomy path that we will end up with a much more fragmented system than we intend to. ...There has to be a central point of coordination for the system in order for our policies to have the impact that we expect and intend them to.

Senator Peter Courtney expressed similar concerns: "Once you break up centralization, you create seven or eight turfdoms. It's just a war." University of Oregon Provost, Scott Coltrane, disagreed with this point of view and shared that the universities have been collaborating well together since

the governance transition. As an example, he pointed to recent joint proposals from Oregon's public universities to the legislature to increase funding for higher education. The universities have also been working together to provide certain services to all campuses (e.g. shared retirement plans). In July 2016, the Oregon Public Universities Council of Presidents hired an executive director for a new organization to lobby for their interests and respond to policy issues.[141]

11.2 Implications of State Funding of Postsecondary Education

Adequate state support for postsecondary education remains a key element for the future of Oregon's public universities, community colleges, and their students. Among the areas of needed support are biennial appropriations for the university and community college support funds, financial aid programs, capital investments through bond issues, and research funding. Although the 2015 Legislature increased appropriations for the 2015-2016 biennium by about 22%, funding remains below pre-recession levels. Andreas Henderson of the Oregon Community College Association was pleased with the funding increase to $550 million but observed that it would take $660 million to stay on track for the 40-40-20 goal.[142] Increasing costs of the state's retirement system, PERS, and health insurance costs for employees will further impact postsecondary education.

In an interview with *The Oregonian*, Dr. Chris Maples, who recently stepped down as President of the Oregon Institute of Technology, stated,

> Oregon is great about talking about supporting higher ed and has generally been not really great at putting their money where their talk is. That was the biggest surprise to me. I think Oregon has a long way to go to get higher ed built up to where it will be of an economic benefit for the state as the state really tries to compete in a global economy.[143]

Inadequate state level funding impacts the institutions in multiple ways. Recruitment of quality faculty and retention of students becomes more difficult. Higher tuition leads to an increase in student debt. By creating the need to work while attending college, it can also lead to longer times for degree completion. Ben Cannon, Executive Director of HECC, noted that state financial aid for university students targets only those in lowest 30% income bracket. Middle income students often get ignored. He stressed that public investment needs to be significant.

In an interview, President Ray at OSU cited statistics that nationwide 38% of students graduate without debt and 62% (63% at OSU) have on average $24,000 in debt. The biggest portion occurs in the lower income or minority populations. President Ray observed that nationally 53% of students graduate but what about the 47% that do not graduate but have debt. Portland State University Provost, Sona Andrews, noted that PSU is the lowest funded school per degrees awarded. Many PSU students are working and require longer times to complete degrees, making tuition increases particularly painful.

University of Oregon provost, Dr. Scott Coltrane, indicated that UO tuition was comparable to other public research universities. He noted that in-state student tuition does not cover the cost of education, and that the higher tuition charged for out-of-state students subsidizes education for Oregon residents. Nearly half of the school's students, including 35% of transfer students, are from out of state, but Dr. Coltrane and his staff emphasized that these students face high admission standards and do not take seats away from qualified Oregon students who want to attend the University of Oregon.

Reporting in *The Oregonian*[144], Andrew Theen discussed a New York Times analysis:

> The Times found that the number of out-of-state freshmen at public schools has nearly doubled in the past 30 years.

> According to the Times' analysis of U.S. Department of Education figures, 3,579 students came to Oregon in 2014 for college while just 1,425 Oregon students left for other

states…Californians accounted for more than 50 percent of the out-of-state freshman attending Oregon public universities in 2014.

In the same article, Portland State University President Wim Wiewel called out-of-state students "absolutely essential" to the school's future, noting also that the University of Oregon has $150 million per year more to spend because of its nonresident students.

Dr. Angstadt at Rogue Community College explained that less than 1/3 of funding is state support, probably a little more than 1/3 is property tax, and 1/3 is tuition from students. Addressing the 40-40-20 goal will require more funding for opportunity, assessment and counseling. Dr. Lisa Avery of PCC also indicated more funding will be necessary for the counseling and support component. Dr. Roy Saigo of Southern Oregon University explained that the Jackson/Josephine pledge program and other bridge activities are tied to increases in state funding and need continuing public support.

It is clear from interviews and current literature that more funding for student support and counseling is needed to increase student success and retention. Students from previously underserved communities may be less prepared for college work and, therefore, are often more expensive to educate. For all students, not only are adequate advisory personnel important, but greater numbers of full-time faculty are needed to provide consistent contact opportunities. Decreases of funding also have led to the hiring of greater numbers of part-time faculty. These faculty members may be excellent teachers, but the nature of their employment may lead to little time for advising or helping students outside of class time.

In August 2016, recognizing these funding needs, HECC commissioners, in August 2016, unanimously approved a budget request, with a big increase of funding for Oregon's public universities and community colleges.

> As part of the state budget process, HECC develops an Agency Request Budget (ARB) in close collaboration with Oregon's public campuses and partners and in alignment with its most recent Strategic Plan. Over the course of several public meetings, the Commission established its budget priorities and closely reviewed staff recommendations for the major funding obligations.[145]

This new request, sent to the Governor's office, includes:

- $943 million for public universities
- $795 million for community colleges
- $200 million for the Oregon Opportunity Grant
- $34 million to continue funding for Oregon Promise

Additional funding for Workforce Development, capital funding, and investments for HECC's "Key Strategies" outlined in its Strategic Plan are also part of the budget request. Ben Cannon, HECC executive director, noted, "This is a very aggressive and ambitious budget request. …It isn't all together clear that the Governor and the Legislature will be able to afford the entirety of what we're requesting here."[146]

11.3 College Preparedness

Many of those interviewed for this study expressed concern about the preparation of high school students for college. In order to meet the 40-40-20 goal, Oregon needs to achieve a 100% high school graduation rate. In June 2015, an analysis in *The Oregonian/OregonLive,* designed to study every states' public schools, found: "Oregon schools ranked number 38 in the nation in performance. They ranked No. 39 in spending per student, adjusted for the cost of living." They also found Oregon's graduation rate "is far below the national average." Graduation rates for Black and Hispanic students were even lower than the national average.[147] Although recent results indicate some improvement, Oregon still ranks well below average.

In September 2016, the Oregon Department of Education released the results of the Smarter Balance Tests, "Overall, 55 percent of students fully mastered Common Core standards in English and just 42 percent met them in math, according to the second year of results…. High school juniors improved on strong performances in reading and writing and a weak showing in math."[148] Because a significant number of students (approximately 10%) did not take the test, the results may not be reliable, but they indicate a need for improvement to meet the 40-40-20 goals.

Those interviewed repeatedly stressed that meeting the challenge of higher education for 80% of the population requires well prepared participants. Faculty interviewed noted that often the students are unprepared, particularly in math. Ben Cannon reinforced this concern and stressed the need for intervention programs, such as summer bridge programs, orientation, and mentoring, which increase persistence and success. He observed that these options require funding.

Developmental education is a major topic for both community colleges and universities with emphasis on English and math and college preparedness. Chemeketa Community College faculty member, Traci Hodgson, noted that a significant percentage of students do not test at college level. She added that the preparedness of students has gone down, and many students are not ready for college.

Dr. Hodgson also expressed concern that plans to develop more ways to obtain college credit in high school may be premature in line with current results. A number of those interviewed expressed concern that high school faculty may not have the credentials to teach college courses, and a heavy burden may be placed on community college faculty to support these courses.

Particular emphasis is being placed on minority and first generation students who lack the background and may need additional support and counseling. Most of the higher education institutions are developing programs to support these groups. Many of these programs are discussed in other portions of this study. All these programs require additional staff and funding. Ultimately, President Ed Ray of OSU commented that the students must own their success or failure, but the institution can give them the information.

11.4 Issues Around the STEM Workforce

According to Mark Lewis, STEM Director in the office of the Chief Education Officer, industries are energetic and willing partners, but they do not know how to engage with universities around the issues of diversity and student preparation. Much talent is imported but it is not very diverse. Some suggest that real-world problems should be brought to courses to provide a context for the content being taught. Those companies that have professionals of color would be a good resource to work with universities and to help to make the necessary connections.

Christine Vernier, Vice-President of Vernier Software & Technology, reports that the company supports higher education by providing scholarships for first generation students and by hiring graduates from our local universities. She noted that some students lack the skills desired by the company, including a good work ethic, creativity, innovative thinking, and the ability to multitask and think outside the box.

11.5 The Impact of the Internet

The use of the internet for online courses, in regular curriculum and for social media, was mentioned in many of the interviews and readings for this study. The expanded use of the internet will impact virtually all components of higher education, including institutional design, student interactions, marketing and social interactions, substantially affecting funding sources and budgets.

A report produced by the Pew Research Institute in 2012 noted:

The future impact of the Internet on higher education: Experts expect more efficient collaborative environments and new grading schemes: they worry about massive online courses, the shift away from on-campus life. Tech experts believe market factors will push universities to expand online courses, create hybrid learning spaces, move toward 'lifelong learning' models and different credentialing structures by the year 2020. But they disagree about how these whirlwind forces will influence education, for the better or the worse.[149]

OSU has taken a leadership role in Oregon in developing online education, both for credit materials and free courses and outreach. However, all Oregon public institutions are adopting more internet outreach.

Lisa Avery of PCC Sylvania noted that we need to be prepared to respond to social media, a changing form of communication.

Joe Sabado, the Acting Executive Director for Student Information Systems at the University of California, Santa Barbara, writing on his blog explained:

Social media presents challenges and opportunities for universities in the way they communicate and provide services to students, enhance their educational experiences, and prepare them for the workforce. Social media can be defined as a set of online tools that people use to share content, opinions, and ideas that create potential interactions. The most popular social media sites are Facebook, Twitter, LinkedIn, YouTube and blogs. Combined with mobile devices and cloud computing, all known as consumer technologies, social media has enabled students to have access to information anytime, anywhere.[150]

Positives of social media include: an education tool enriching the learning experience, enhancing student engagement, improving communication among students and teachers, and preparing students for successful employment. The negatives include: social media as a distraction, a tool for cyberbullying, and a substitute face to face communication.[151] Faculty interviewed for this study noted the difficulties in managing the 24-hour time demands of students accustomed to immediate access.

Many of those interviewed recognized that the internet was changing the campus and may have effects on university structures, as well as the cost of education and the design of courses in the future. Faculty will be expected to adapt to these changes.

11.6 Campus Security

A growing concern for institutions of higher education is campus security. Issues such as sexual assault and shootings make the news frequently. The shooting on the campus of Umpqua Community College highlighted the fact that Oregon is not immune to these issues. There is significant disagreement on how security should be managed. In May 2016, PSU students protested the arming of security guards on campus.[152]

Oregon law prohibits firearms in public buildings, except for a person with a concealed carry license, said Kristina Edmunson, a spokeswoman for the state attorney general. However, community college and university boards have broad authority to enact policies, she added.

This ambiguity has fueled a debate over the extent of control colleges have in setting their own policies and whether more law-abiding gun-carriers could subdue future killers and save lives.[153]

The Oregon Legislature, the only body with the authority to regulate firearms, has proposed bills over the past several years seeking to clarify guns-in-school laws, but none passed. One proposal would have banned all guns on school grounds.[154]

Appendix 1: General Higher Education Definitions:

Postsecondary education, or higher education, or tertiary education for this study is any course of education beyond completion of high school. This education can be competed through a college or university, institute of technology, community college, vocational or trade school or internship program. These programs can lead to academic degrees, diplomas or certificates.

A national definition of higher education is found in **20 U.S. Code § 1001.** The definition identifies institutions of higher education as those providing degree or programs leading to degrees, under legal state authorization, public or non-profit, and accredited by a nationally recognized accrediting organization. The definition also recognizes as higher education those institutions that are public or non-profit and provide certificate programs of not less than one year to adult students or students who are also enrolled in programs to complete secondary education.[155]

DIFFERENT TYPES OF HIGHER EDUCATION

Colleges and Universities

The term *college* is a general one that encompasses a wide range of higher-education institutions, including those that offer two- to four-year programs in the arts and sciences, technical and vocational schools, and junior and community colleges. The term *university* specifically describes an institution that provides graduate and professional education in addition to four-year post-secondary education. Despite these distinctions, the terms *college* and *university* are frequently used interchangeably in the United States.[156]

Community Colleges

According to the American Association of Community Colleges:

> Community colleges are comprehensive public institutions that provide a wide variety of educational services, ranging from adult and community education services, through postsecondary career and technical education, to academic and professional studies at the university level permitting transfer to higher level studies. Some community colleges have begun to offer accredited bachelor's degree programs. Nearly all community colleges have transfer arrangements with local public and private colleges and universities (called articulation agreements) that permit qualified students who have completed approved courses of study to transfer to bachelor's level studies with up to two years of academic credit.[157].

> Vocational/Career/Technical Schools or Colleges.

> Career and technical education is a term applied to schools, institutions, and educational programs that specialize in the skilled trades, applied sciences, modern technologies, and career preparation. It was formerly (and is still commonly) called VOCATIONAL EDUCATION; however, the term has fallen out of favor with most educators.

> Career and technical programs frequently offer both academic and career-oriented courses, and many provide students with the opportunity to gain work experience through internships, job shadowing, on-the-job training, and industry-certification opportunities. Career and technical programs—depending on their size, configuration, location, and mission—provide a wide range of learning experiences spanning many different career tracks, fields, and industries, from skilled trades such as automotive technology, construction, plumbing, or electrical contracting to fields as diverse as agriculture, architecture, culinary arts, fashion design, filmmaking, forestry, engineering, healthcare, personal training, robotics, or veterinary medicine.[158]

In Oregon these schools are licensed by the Office of Private Post Secondary education. Over 208 schools are present in Oregon. Programs vary in length, but have specific target outcomes.[159]

These programs often provide certificates at completion. *Vocation certificates or degrees* specifically prepare "an individual to work in a chosen field. By contrast, a college undergraduate degree focuses on developing an individual's all-around intelligence and critical-thinking skills, but may not prepare an individual for a specific job, depending on the major that is chosen."[160]

Accreditation

The U.S. Department of Education defines accreditation as:

> Accreditation is the recognition that an institution maintains standards requisite for its graduates to gain admission to other reputable institutions of higher learning or to achieve credentials for professional practice. The goal of accreditation is to ensure that education provided by institutions of higher education meets acceptable levels of quality.[161]

The Council for Higher Education Accreditation further expands the definition:

> Accreditation in higher education is defined as a collegial process based on self- and peer assessment for public accountability and improvement of academic quality. Peers assess the quality of an institution or academic program and assist the faculty and staff in improvement.[162]

Most public and non-profit universities and colleges are accredited through regional accreditation organizations. At the present time degrees from higher education units with regional accreditation are better recognized and credits more readily transferred than those with national accreditation. Oregon's universities and community colleges are accredited through regional accreditation through the Northwest Commission on Colleges and Universities. A list of all the Oregon colleges that have regional accreditation can be found at http://www.nwccu.org/.

Appendix 2: Oregon's Universities

Eastern Oregon University (EOU)

- **Enrollment** (fall, 2015) 3,488; full time 1,759, graduates 90,[163] residents 72%[164]
- **Tuition** (2016-17): (resident) $6,639 +$1400 fees, non-resident $17,979, resident graduate $11,934 + fees. The Western Undergraduate Exchange (WUE) Program offers reduced tuition to non-residents from Western states of $9,990 + fees.[165]
- **Faculty**: 96 (full time) approximately 80% tenured or tenure tracked, 7 part time
- Student teacher ratio: 25:1
- **Annual budget** (2015): $44 million[166]

Academic programs are offered through the College of Arts and Sciences and the College of Business and Education. Four master degree programs, numerous majors and minors and pre-professional programs are offered. Additional programs are offered in Agriculture in cooperation with OSU and in Nursing in cooperation with OHSU.[167] EOU offers both on campus and online programs and degrees. Eastern Oregon has launched a strong program to attract Latino populations in eastern Oregon that includes a Spanish language website. EOU Foundation has assets of over $13 million and provides more than 110 individual scholarships each year.[168] The 2015 financial report is available at https://www.eou.edu/admin/files/2012/05/2015_EOU_financial_report_final.pdf.

Oregon Institute of Technology (OIT)

- **Enrollment** (fall 2015): 4786, full time 2,866, residents 75%[169]

- **Tuition and Fees** (2016-17 estimate) resident $9625, non-resident $27,326, WUE $13,680[170]
- **Faculty:** 168, full time 89%, in tenure or in tenure system 82%
- Student Teacher ratio: 19:1[171]
- **Annual budget** (2016-17) $56,325,000

OIT was established in 1947 and remains the only public institution of technology in the Northwest. OIT has campuses in Wilsonville and Klamath Falls. In the fall of 2015, OIT had an enrollment of over 4700 students reflecting a growth in enrollment of 43% over the past 10 years. Through partnerships in Oregon, OIT offer dental programs in La Grande and Salem Oregon. OIT has partnered with Boeing to offer programs in Washington.[172] Offering more than 40 degree options OIT's curriculum is focused on applied technologies, engineering, health professions, applied sciences, and management.[173]

The Oregon Institute of Technology currently has four active master's degrees, which have been approved by the Oregon University System board: An MS in Manufacturing Engineering Technology which was initiated in fall 2004; an MS in Renewable Energy Engineering which was initiated in fall 2012; an MS in Civil Engineering which was initiated in fall 2013; and an MS in Marriage and Family Therapy which was initiated in Fall 2014.[174] OIT is tied for eighth in the rankings of regional colleges of the West in *US News Report*.[175] In 2014, OIT had an endowment of approximately $22,000,000.

Oregon State University (OSU)

- **Enrollmen**t (2016): 27,285, full time 23,128, (undergraduate) 22,800, (graduate) 3,916, (first professional) 599, 64% residents[176]
- **Tuition and Fees** (2016-17 Estimate): undergraduate $10,296, nonresident $28,761, graduate $13,716, nonresident graduate, $23,361. Costs vary by program.[177]
- **Faculty** (May 2016): Instructional, Full time 1161, part time 460,[178] tenured or tenure tracked approximately 69%[179]
- Student Teacher Ratio 19:1
- Education and operating Budget 2016 $494.2 million[180]

OSU is a Land Grant College established in 1868. OSU offers over 200 undergraduate and 100 graduate programs. Enrollment is over 30,000. "With 11 colleges, 15 Agricultural Experiment Stations, 35 county Extension offices, the Hatfield Marine Science Center in Newport and OSU-Cascades in Bend, Oregon State has a presence in every one of Oregon's 36 counties, with a statewide economic footprint of $2.371 billion."[181] Colleges include Agriculture and Life Sciences, Business, Earth, Ocean and Atmospheric Sciences, Forestry, Pharmacy, Veterinary Medicine. It has Sea Grant, Space Grant and Sun Grant designations.[182]

The University is ranked 135th among national universities and 68th among top public schools nationally, Graduate programs in earth science, veterinary medicine, public health and pharmacy are ranked in the top fifty. It also has a strong global ranking in agricultural, environmental geosciences and plant and animal science. The University has a strong athletic program.[183] As of June 2015 the endowment holdings were approximately $505,000,000.[184] The campaign for OSU concluded in December 2014 raising $1.14 billion for the university.[185]

Portland State University (PSU)

- **Enrollment** (2015-16): 29,057 62% full time, 22,495 (undergraduate), 5,581 (graduate), 78% resident
- **Tuition and Fees** (2015-16): $8,034 (undergraduate resident),
- $24,009 (undergraduate nonresident) $14,100 (graduate, resident) $21,300 (nonresident graduate)

- **Research and Instructional faculty**: 1,741, approximately 55% full time and 54% tenured or tenure track.[186]
- Student Teacher ratio: 19:1
- Education and Operating Budget (2017): $325.5 million[187]

PSU was established in 1946 and is the only urban campus in the University system. PSU student demographics are diverse with 40% of the students from minority populations. Most popular undergraduate programs are Accounting, Art and Design, Biology, Health Studies, and Psychology. Colleges included College of the Arts, College of Liberal Arts and Sciences, College of Urban and Public Affairs, Graduate School of Education, Maseeh College of Engineering and Computer Science, School of Business Administration, and School of Social Work.[188] PSU is recognized for its Public Affairs and City Management and Urban Policies programs.[189] PSU has an endowment of $58,000,000 (June 2015).[190]

Southern Oregon University (SOU)

- **Enrollment** (2015): 6,186, full time undergraduate 3,637, full time, graduate 227, nonresident 1,812
- **Tuition and Fees**: Resident $8,145, Nonresident 22,365, resident graduate $15,822, Non-resident graduate $19,422
- **Faculty**: 162 full time 150 part time (48%), tenured track faculty, 130
- Student Teacher ratio: 23:1
- Education and Operating Budget (2015): $91.5 million[191]

SOU offers over 50 majors for Bachelor of Arts or Science as well as for Bachelor of Fine Arts or Applied Sciences. Bachelor's degrees are also offered in cooperation with various professional schools and institution. Programs include degrees in chiropractic (Western States Chiropractic College, Dental Hygiene (Oregon Institute of Technology), Medical Technology (OHSU) Optometry (Pacific University. There are 13 pre-profession programs of one to four years followed by transfer to other institutions. SOU works closely with regional high schools and community colleges. A significant portion of their student body is from California. Graduate degrees are offered in 13 disciplines.[192] SOU has an endowment of approximately $23,000,000.[193] It is ranked 73rd among regional universities in the west.[194]

The University of Oregon (UO)

- **Enrollment:** (2015): 24,125, 21,566 full time, 20552 undergraduates, 3573 graduate, 8495 (35%) nonresident[195]
- **Tuition and Fees:** (2015-16): resident $10,761, nonresident $33,441, resident graduate$16,242, non-resident graduate $26,610[196]
- **Faculty:** (2014-15): 2066, tenure and tenure-track 735 (35.5%) adjuncts 393 (19%)[197]
- Student Teacher ratio: 18:1
- Education and Operating Budget: $480.9 million[198]

UO was established in the 1870s. It offers 270 science and liberal arts options including its well know College of Education, College of Law and the Charles Lindquist School of Business.[199] On a national basis it is not ranked among the top 50 schools with the exceptions of the graduate program in education and the graduate program in earth sciences.[200] UO is in Division 1 of the NCAA and is recognized for its athletic programs including track and field and football. The University has an extensive research program. UO is currently updating and expanding its science programs. Recently UO has expanded its program offerings in Portland. In 2015 the University endowment passed $1 billion ($1.084 billion).

Western Oregon University (WOU)

- **Enrollment** (2015) 5545, undergraduate 4,059 full time, 749 part time, graduate 273 full time, 360 part time 20% nonresident[201]
- **Tuition and Fees** (2016-17) resident $9,400, nonresident $23,400, WUE $13,200, graduate resident $14,700, nonresident $21,800[202]
- **Faculty** (2015-16): 373, tenure and tenure tracked 164 (44%), 83 part time faculty (22%)[203]
- Student Teacher ratio: 18:1
- Education and Operating Budget (2015-16): $65.3 million[204]

WOU was established in 1856 making it the oldest of Oregon's universities. It offers 55 undergraduate programs through the College of Liberal Arts or the College of Education. Western Oregon is recognized for its education programs.[205] WOU has a dual enrollment program with Chemeketa Community College that allows students to be dual enrolled with Chemeketa using the WOU application process. The university is not ranked in the top 50 regional universities.[206] It has an endowment of about $15,000,000.[207]

University Mission Statements

https://www.eou.edu/president/mission/

http://www.oit.edu/visitors-info/about/mission-statement
http://oregonstate.edu/main/mission
http://www.pdx.edu/portland-state-university-mission

http://www.sou.edu/president/mission.html
http://pages.uoregon.edu/uosenate/UOmissionstatement.html

https://www.wou.edu/provost/MissionStatement.php

Appendix 3: Oregon Health & Science University

Oregon Health & Science University (OHSU) is a nationally prominent research university and Oregon's only public academic health center. It educates health professionals and scientists and provides leading-edge patient care, community service and biomedical research. It was originally established as a Department of Medicine in Portland by University of Oregon in 1887. When the medical and new dental programs merged with Willamette University's medical program in Portland in 1915, it became the University of Oregon Medical School and moved to its campus on Marquam Hill in 1919.

In 1974, University of Oregon Health Sciences Center was formed as an independent institution under the direction of the Oregon State System of Higher Education. The schools, hospitals and all of the university's programs were brought together under one umbrella to create this new center, which became Oregon's only academic health center and one of 125 in the nation. It was renamed Oregon Health Science University in 1981. In 1994, the Oregon National Primate Research Center joined OHSU as an affiliate research institute.

In 1995 OHSU became a public corporation and separated from the Oregon State System of Higher Education. Governance of OHSU changed from the Board of Higher Education to the OHSU Board of Directors, whose members are nominated by the Governor and approved by the Oregon Senate.

In 2001, OHSU's name changed to Oregon Health & Science University as Gov. John Kitzhaber signed legislation expanding OHSU's mission and paving the way for merger with Oregon Graduate Institute of Science and Technology. The merger took place July 1, 2001.[208]

In 1990, the state provided 19% of OHSU's operating budget of $340M, or $64.6 M. In 1995, when OHSU became independent, the state contributed 12% of its budget of $499M, or $59.9M. In 2000, the support level was 6.4% of an $882M budget, or $56.5M.

In 2015, the state provided $33.6M, or 1.4% of a $2.4B budget. Thus the dollars from the state have been reduced to half of the original support. With the decrease in state funding came an increase both in research dollars and philanthropic gifts.[209]

Educational Impact of OHSU:

OHSU's Schools of Medicine, Dentistry, Nursing, and other allied health care programs enrolled 1,464 students in 1990 and 2,895 in 2015. In addition, more than 500 students from other institutions take part in joint programs at OHSU; they also support over 300 post-doctoral research fellows and over 800 residents and fellows in health care. They awarded 1,211 professional degrees in 2014 and employed 2,787 clinical and basic science faculty members.

The completion in 2015 of the Collaborative Life Sciences Building on the South Waterfront brought together Oregon Health & Science University, Oregon State University, and Portland State University in one location to benefit all of Oregon. The $295 million building is the first on this scale to combine the resources of multiple universities to offer the best possible science education and research opportunities for students. The facility strengthens partnerships between the universities while expanding their teaching facilities, class sizes and research activities.

Economic Impact of OHSU:

Despite a challenging economy, OHSU's total economic impact grew 77 percent over the last five years. OHSU stimulated the state economy and brought money into Oregon by providing specialty health services and conducting leading-edge research. It sponsors community-based programs statewide, each of which has their own local impact. OHSU's own workforce is over 15,000, including physicians, dentists, nurses, physician assistants, dieticians, scientists and lab technicians. They also provide family wage jobs and opportunities for career growth in such diverse job areas as accounting, carpentry, information management, interpreting, logistics, office management, public safety, transportation and many others.

OHSU claims an economic impact of $4.3B, which includes activities it generates by itself and other activities that it claims would leave the state if OHSU were not present. It generates gross annual income taxes and property taxes of $90M directly and indirectly through its employees and those in supporting industries.[210]

Appendix 4: Online Learning

University of Oregon has been offering online courses since 1996. Courses are offered in a variety of academic programs including a Master of Science degree in Applied Information Management. Current active students are eligible, and others may take courses through the Community Education Program that allows non students to register for up to 8 credits per year. Costs are per credit.

Oregon State Ecampus[211] offers the same transcripts and diplomas as for on-campus students. The Ecampus offers 19 undergraduate degrees online. Additionally, it offers more than 20 graduate programs[212] online, nearly 20 online minors,[213] [214] and online chemistry labs and courses. Students pay tuition per credit and an additional distance education fee ($80 per credit in 2016). On-campus student must also pay this tuition and fee if they elect to take online courses. The OSU online bachelor's degree was ranked No. 5 by U.S. News in 2014.[215]

Southern Oregon University offers online learning in-state and is developing a program for out-of-state access. Three types of courses are offered: completely online courses, hybrid courses that also require some campus attendance, and two-way video courses.[216]

Portland State University offers a wide range of online course, with most found in the Graduate School of Education, the College of Urban and Public Affairs, the School of Business Administration, the School of Social Work and Maseeh College of Engineering and Computer Science.[217] PSU provides an extensive list of skills required for effective online learning at http://www.pdx.edu/psuonline/node/36.

Western Oregon University offers online courses and degrees and certificate programs at both the undergraduate and graduate level. In addition, they offer both online and hybrid classes each term.[218]

Eastern Oregon University offers a variety of undergraduate and graduate majors online or as hybrids at a variety of locations. Non-students may take up to eight credits each year online.[219]

Oregon Technical Institute offers a variety of online courses and certificates and bachelor's degrees in several areas. Students holding certifications in a number of medical fields, including dental hygienics, health care management and radiologic science, may complete their bachelor's degrees through the online program.[220]

Most of **Oregon's Community College**s offer certificate and associate degree programs online. A list of 45 colleges offering online programs is available at Open Education Data Base (OEDB) Overview of online colleges in Oregon at http://oedb.org/oregon/.

Appendix 5: Research in Oregon Universities

Oregon State University

For the Fiscal year 2013-14 OSU received $285 million dollars for over 1400 active research projects. Approximate $171 million came from federal sources.[221] OSU researchers collaborate in three priority areas:

- Advancing the Science of Earth Ecosystems
- Improving Human Health and Wellness
- Promoting Innovation and Economic Prosperity

A complete list of the 31 research clusters is available at http://research.oregonstate.edu/research-centers-and-institutes-osu. Clusters include Hatfield Marine Science Center, Oregon Sea Grant, Linus Pauling Institute, Oregon Nanoscience and Microtechnologies Institute, and the Institute for Natural Resources.

> At any one time, OSU researchers are conducting more than 1,400 active research projects on topics such as aging, robotics, materials, pharmaceuticals, computer software, salmon recovery, climate, education and health risks from pollutants. They are developing new crop varieties, investigating the use of unmanned aerial systems in agriculture and forest management, improving the understanding of ocean productivity and studying new materials for energy storage.[222]

University of Oregon

For the fiscal year 2013-14, the UO received $110.3 million in grants, contracts and competitive awards. A total of 631 awards were received.[223] Approximately 98% of the research rewards came from out of state. Federal support was $97.3 million.[224]

> The UO, the state's only Association of American Universities member, generated research that continued to inspire innovations, including new spinout companies, the filing of 25 U.S. patent applications and a total reinvestment of $6.3 million to academic units, innovators and the state of Oregon. The UO's return on research through licensing income (licensing income divided by research expenditures) in 2014 was 9.2 percent, putting the university among the top performing research institutions nationally.[225]

Of note in 2014 is the UO's involvement in the Oregon Regional Accelerator & Innovation Network (RAIN). Established to create opportunities and support for start-up companies, the network has expanded with the opening of the RAIN Eugene Accelerator.[226]

Portland State University

PSU is proud of its urban connection and role as an incubator. In 2013 PSU reported $69.5 million in research expenditures.[227] PSU received over $64 million in 2013-14 and received its largest grant ever $24 million with a possible $2 million extension. The EXITO grant from the National Institutes of Health (NIH) "will help hundreds of underrepresented students enter the health science workforce, assuring that patients see caregivers whose backgrounds more closely reflect their own."[228]

In its fourth year the PSU Research and Strategic Partnership Office is expanding PSUs activities in a collaborative approach with public and business partners in the urban region. PSU is part of an incubation process and also works in collaboration with Oregon Health and Science University.[229]

Oregon Health and Science University

In 2015 OHSU received over $376 million in awards including those for research, clinical trials and instruction. Federal sources provided over $271 million, nonfederal government provided $2.7 million, industry provided $46.7 million and private sources provided $34 million. The largest amount went to the school of medicine.[230]

Western Oregon University

In 2013-14 "the Teaching Research Institute and College of Education received a $200,000 grant from the Oregon Department of Education to support Project High Five – Culture, Collaboration, Commitment, Communication and Community" and "the U.S. Department of Justice Office on Violence Against Women awarded $300,000 to the Teaching Research Institute to expand the campus collaboration on sexual violence prevention and response."[231]

Southern Oregon University

The Southern Oregon University Research Center (SOURCE) is the center for SOU's research program and current is overseeing projects on Head Start Programs, after school programs, the removal of the Gold Ray Dam among other projects.[232]

Eastern Oregon University

EOU operates the Center for Rural Studies that provides research to assist rural communities in the 21st century while providing students with both the academics and practical experiences to work in the rural environment.[233]

Activity	Budget Items	2015-2017 Adopted Budget	% Change over 2013-2015
Financial Aid	Oregon Opportunity Grant	$140.9 M	+23.6%
Public University Support	Support Fund	$665.0	+27.8%
Community College Support	Support Fund	$555.9 M	+19%
Debt Service		$186.7 M	+32.6%
ASPIRE and Outreach		$3.2 M	+77%
University Capital Projects	New bonding capacity (GF/LF repaid) Campus repaid Total	$244.8M $53.0 M $297.8 M	-0.6% -86.2% -52.7%
OHSU		$77.3 M	+6.4%
Public University State Programs		$38.1 M	+49%
Statewide Programs	Agriculture Experiment Station, Extension Service, Forest Research Lab	$118.5 M	+17.1%
HECC Infrastructure and Integration		$46.4	+71.1%

1 Academic Partnerships. "States and Higher Ed: Growing Economic Strains Challenge Public Colleges and Universities, introduction", https://www.insidehighered.com/views/2015/01/12/essay-sees-possible-collapse-austerity-politics-around-higher-education. Accessed 9/25/16 at https://www.insidehighered.com/content/states-and-public-higher-ed.

2 Sarasohn, David, "In Oregon, it sounds like higher education is important", *The Oregonian*, December 15, 2013

3 United States Department of Labor, Bureau of Labor Statistics, Employment Projections, Employment by Major Occupation Groups, http://www.bls.gov/emp/ep_table_101.htm. Accessed 2/10/15.

4 Williams, J. P. "How manufacturing can solve its Own Talent Crisis", *Industry Week, May 2014*, http://www.industryweek.com/recruiting-retention/how-manufacturing-can-solve-its-own-talent-shortage-crisis. Accessed 2/10/15.

5 Lindsay Warner, Susan L. Gates, and Stephanie Schaefer. "Oregon Must Compete, A Report by America's Edge, 2013", http://media.oregonlive.com/money_impact/other/AE OR Skills Report.pdf. Accessed 9/25/16

6 History of Higher Education, Pursuing the College Degree. *Random House*. Accessed 5/19/15 at http://www.randomhistory.com/1-50/039degree.html.

7 Northwest ordinance, Archiving Early America, http://www.earlyamerica.com/milestone-events/northwest-ordinance/ Accessed 9/25/16.

8 "American Education History", *Education Resources,* http://www.eds-resources.com/educationhistorytimeline.html. Accessed 5/19/15.

9 http://www.whitehouse.gov/issues/education/higher-education. Accessed 7/19/14.

10 Merisotis, Jamie, "The boat is rocking … so set a new course", *Lumina Foundation,* 29 January 2014. http://www.luminafoundation.org/about_us/president/speeches/2014-01-29.html, Oregon Higher Education Symposium. Accessed 7/21/14.

11 State Higher Education Finance FY 2013, p.28, *SHEEO,* http://www.sheeo.org/sites/default/files/publications/SHEF_FY13_04292014.pdf. Accessed 7/18/14.

12 SHEEO, ibid., p. 10.

13 *A Stronger Nation: Postsecondary learning builds the talent that helps us rise*, http://strongernation.luminafoundation.org/report/2016/main-narrative.html. Accessed 9/25/16.

14 A Stronger Nation through Higher Education 2014, *p.7*, http://www.luminafoundation.org/stronger_nation. *A*ccessed 7/23/14.

15 Ibid*.*

16 Ibid.

17 http://www.whitehouse.gov/issues/education/higher-education. Accessed 5/5/2014.

18 http://www.whitehouse.gov/issues/education/higher-education. Accessed 9/3/14.

19 Espinosa, Lorelle L., Jennifer R. Crandall, Malika Tukibayeva, *American Council on Education, Rankings, Institutional Behavior, and College and University Choice*, 2014. Accessed at http://store.acenet.edu/products/rankings-institutional-behavior-and-college-and-university-choice-pdf on 4/1/14.

20 http://www.oregon.gov/HigherEd/Pages/campuslinks.aspx. Accessed 7/11/2016.

21 Office of University Coordination: 2015-16 Public University Budget Report Summary, https://www.oregon.gov/HigherEd/Documents/HECC/Resources/Finance/HECCBRS-030716-Final.pdf. Accessed 12/5/2016.

22 "Southwestern Oregon Community College Receives $2.4 Million Grant to Support Career Training Programs", *SOCC* October 9, 2014, http://www.socc.edu/news-archives/422-swocc-receives-2-4-million-grant-to-support-career-training-programs. Accessed 1/8/15.

23 Community College Viewbook, Online Version, http://www.oregon.gov/ccwd/Pages/ccdirectory.aspx. Accessed 12/11/16.

24 "Oregon Community Colleges and Community College Districts", http://www.oregon.gov/ccwd/pdf/OregonCommunityCollegeDistricts.pdf. Accessed 1/7/15.

25 Demographics, http://www.pcc.edu/about/quick-facts/demographics.html. Accessed 7/11/2016.

26 HECC. "Oregon's 17 Community College: Student Success and Economic Development", https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/57651. Accessed 9/25/16.

27 Office of Student Access and Completion of Higher Education Coordinating Commission http://www.oregonstudentaid.gov/oda-other-degree-granting-colleges.aspx. Accessed 11/14/16.

28 Chief Education Office, What We Do, http://education.oregon.gov/#what-we-do. Accessed 12/11/16.

29 House Bill 3120, http://gov.oregonlive.com/bill/2013/hb3120/. Accessed 9/25/16.

30 http://www.oregon.gov/HigherEd/Pages/legislative.aspx. Accessed 9/17/15.

31 HECC, *Oregon Higher Education Strategic Plan: 2016-2020*, Spring 2016, p.1, http://www.oregon.gov/HigherEd/Pages/strategic_plan.aspx. Accessed 7/30/16.

32 Ibid.

33 Ibid. and http://www.oregon.gov/HigherEd/Pages/about.aspx. Accessed 3/15/16.

34 Strategic plan: 2016-2020, op. cit.

35 Higher Education Coordinating Commission: About Us, https://www.oregon.gov/HigherEd/Pages/about.aspx. Accessed 5/30/16.

36 ORS Chapter 352 — Public Universities, https://www.oregonlegislature.gov/bills_laws/ors/ors352.html. Accessed 5-25-16.

37 ORS 352.033

38 Oregon Revised Statutes: Chapter 352, https://www.oregonlegislature.gov/bills_laws/ors/ors352.html. Accessed 11/14/16.

39 "Eastern Oregon University and Southern Oregon University Financial Conditions", https://www.oregon.gov/HigherEd/Pages/FinConditions-EOU-SOU.aspx. Accessed 9/25/16.

40 Domonell, Kristen, "Oregon Universities Split from State System", *University Business,* January 2014, https://www.universitybusiness.com/article/oregon-universities-split-state-system. Accessed 11/12/2016

41 Strategic Plan: 2016-2020, p. 11.

42 Ibid., p. 6

43 Ibid., p. 7

44 Ibid., p. 7

45 Ibid., p. 12

46 Kitzhaber, John, Ben Cannon and Nancy Golden. Presidents Letter: Equity Lens, April 18, 2014, http://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/Presidents_letter_Equity_Lens.pdf. Accessed 6/13/16

47 HECC, Disparities in Higher Education, Final Report, http://www.oregon.gov/HigherEd/Documents/HECC/2016 Full Commission Meetings/05_May-12-16/7.1b.HB3308DisparitiesinHigherEducationFinalReport.pdf. Accessed 9/25/16

48 2015-17 Affirmative Action and Diversity/Inclusion Plan, http://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/HECCAAPlan2015-17final.pdf. Accessed 9/25/16.

49 "Higher Education Coordinating Commission Approval Standards", http://handbook.ccwdwebforms.net/handbook/program-approval/state-board-of-education-approval-standards. Accessed 9/25/16.

50 "Office of Private Postsecondary Education: Private Career Schools", https://www.oregon.gov/HigherEd/Pages/priv_career_schools.aspx. Accessed 9/25/16.

51 Oregon Administrative Rules: Higher Education Coordinating Commission, Division 45 Private Career Schools, http://arcweb.sos.state.or.us/pages/rules/oars_700/oar_715/715_045.html. Accessed 9/25/16.

52 Office of Student Access and Completion of HECC, http://www.oregonstudentaid.gov/oda-degree-authorization.aspx. Accessed 11/14/16.

53 "HECC 2016 Legislative Summary", http://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/LegReports/HECC 2016LegislativeSummaryfinal.pdf. Accessed 11/14/16.

54 "About the Aspire Program", http://www.oregonstudentaid.gov/aspire-about.aspx. Accessed 9/17/15.

55 "Encouraging Education for Everyone", http://www.oregonstudentaid.gov/aspire.aspx. Accessed 7/4/2016.

56 Eastern Promise, http://eastern-promise.org/programs/academic-momentum. Accessed 7/4/2016.

57 "SOU Diversity Programs and Initiatives", http://sou.edu/diversity/precollege.html. Accessed 9/25/16.

58 SOU Specialized Programs, http://sou.edu/admissions/special.html. Accessed 9/25/16.

59 Future Connect, http://www.pcc.edu/resources/future-connect/, Accessed 7/5/2016.

60 Theen, Andrew. "Oregon's largest universities see 'mediocre' graduation rates as a problem", *The Oregonian/Oregonlive,* September 24, 2016, http://www.oregonlive.com/education/index.ssf/2016/09/oregons_largest_universities_s.html#incart_river_index. Accessed 9/26/16.

61 "Grade 11-14 Transitions", http://www.oregon.gov/HigherEd/Documents/HECC/2016 Full Commission Meetings/04_Apr-14-16/JOINT3.0HighSchooltoPostsecondaryStudentTransitions.pdf. Accessed 8/2/16.

62 Ibid.

63 "Accelerated Learning Recommendations and Standards", http://www.oregon.gov/HigherEd/Documents/HECC/SSIC/2016/06_Jun-8-16/4.0 Accelerated Learning Recommendations and Standards.pdf. Accessed 9/25/16.

64 Saltarelli, C. A. "Examining the Relationship between Early College Credit and Higher Education Achievement of First-Time Undergraduate Students in South Texas", 2010, *Electronic Journal for Inclusive Education*, 2(5).

65 Ibid.

66 Struhl, Ben and Joel Vargas. 2012. "Taking College courses in high school: a strategy for college readiness. The College outcomes of dual enrollment in Texas", *Jobs for the Future*, October 2012.

67 "Accelerated Learning Recommendations and Standards", op. cit. Accessed 9/25/16.

68 Ibid.

69 "Credit for Prior Learning House Bill 4059 Report", https://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/HB4059Report2015FINAL.pdf, Accessed 9/30/16.

70 "AP/IB Statewide Course Credit Policy for 2016-2017", http://www.oregon.gov/HigherEd/Documents/HECC/2016 Full Commission Meetings/05_May-12-16/9.1AP-IBStatewideCourseCreditPolicyfor2016-17.pdf. Accessed 9/25/16.

[71] Community College Fall 2015 FTE Headcount, http://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/Data/CC_Fall20154thweekFTEHeadcount.pdf. Accessed 9/25/16.

[72] Transfer Enrollment and Direct High School Enrollment at Public Universities, Headcount, Fall Term, http://www.oregon.gov/highered/research/Documents/Student/Univ-Enrollment-Transfer-historical.pdf. Accessed 12/2/16.

[73] Total Degree and Certificate Completion at Oregon Community Colleges, 2006 to present, http://www.oregon.gov/highered/research/Documents/Student/CC-completion-history.pdf. Accessed 12/2/16.

[74] Transfer and Credit Policy, http://www.oregon.gov/highered/policy-collaboration/Pages/transfer-credit.aspx. Accessed 12/11/2016.

[75] Higher Education Coordinating Commission. Annual Performance Progress Report (APPR) for Fiscal Year (2014-2015), https://www.oregon.gov/transparency/docs/2015/APPR%27s for Fiscal Year 2015/APPR 2015 HECC.pdf. Accessed 12/2/16.

[76] Grants, http://www.oregonstudentaid.gov/grants.aspx. Accessed 3/3/15.

[77] Oregon Opportunity Grant, http://www.oregonstudentaid.gov/oregon-opportunity-grant.aspx. Accessed 9/25/16.

[78] Ibid.

[79] "Funding Recommendations: Oregon Opportunity Grant", http://www.oregon.gov/HigherEd/Documents/HECC/FA/2016/06_Jun-8-16/4.3 OOG Funding Recommendation for FA.pdf. Accessed 9/25/16.

[80] "Oregon Promise Fact Sheet", http://www.oregon.gov/HigherEd/Documents/HECC/Reports-and-Presentations/OregonPromiseFactSheet.pdf. Accessed 8/2/2016

[81] "Funding Recommendation: Oregon Promise", http://www.oregon.gov/HigherEd/Documents/HECC/FA/2016/05 May-24-16/7.0a.OregonPromiseInvestments.pdf. Accessed 8/2/16.

[82] Theen, Andrew. "Oregon watches as promise of free college is fulfilled", *The Oregonian*, 6/15/16.

[83] Ibid.

[84] Brew, Bob. House Bill 2662, House Committee on Revenue May 11, 2015, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/72586. Accessed 8/2/16.

[85] Testimony on Pay It Forward (HB 2662), https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/77707. Accessed 8/2/16.

[86] "Financial Aid & Scholarships: Pathway Oregon", http://financialaid.uoregon.edu/pathway_oregon. Accessed 9/7/16.

[87] "Western Oregon University Testimony to Legislature", https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/56564. Accessed 9/7/16.

[88] Oregon State University Scholars Program, http://oregonstate.edu/admissions/static/scholarships/index.php#residents. Accessed 9/7/16

[89] Theen, Andrew. "PSU debuts 'Four Years Free' program for low-income students with good grades", *Oregonlive,* October 24, 2016, http://www.oregonlive.com/education/index.ssf/2016/10/psu_debuts_four_years_free_pro_1.html#incart_river_index. Accessed 11/14/16.

[90] Oregon Higher Education Strategic Plan: 2016-2020, p.15, op. cit.

[91] Meeting materials for the Joint Ways and Means Subcommittee on Education, April 8, 2015: *Making a Future for Oregon Students…through equity and support*, p. 3-8, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/60983. Accessed 9/25/16.

[92] Ibid., p.9

[93] Grapevine, https://education.illinoisstate.edu/grapevine/. Accessed 9/27/16

[94] Statements from Governor Kate Brown and Ben Cannon on Oregon ranking #1 nationally for higher ed funding improvement, http://eepurl.com/bN8iZj. Accessed 9/25/16.

[95] Making a Future for Oregon Students…through equity and support, op. cit., p.10

[96] OCCA (Oregon Community College Association) presentation to Joint Ways and Means Subcommittee on Education, 2015, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/57657. Accessed 9/25/16.

[97] *HECC presentation, Day 7, Oregon's Community Colleges: Campus Presentations*, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/57651. Accessed 9/25/16.

[98] "HECC 2015 Legislative Summary", http://www.oregon.gov/HigherEd/Documents/HECC/2015 Full Commission Meetings/11-Nov-12-15/2.2HECC2015LegislativeSummary.pdf. Accessed 1/13/16.

[99] "Postsecondary Funding Distribution Models", presented to House Committee on Higher Education, Innovation, and Workforce Development, May 6, 2015, p. 6, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/70193. Accessed 9/25/16.

[100] Ibid., p. 7

[101] Ibid., p. 14-17

[102] Ibid., p. 22

[103] Strategic Plan. p. 24, op. cit.

[104] Dougherty, Kevin J., Rebecca S. Natow and Blanca E. Vega. "Popular but Unstable: Explaining Why State Performance Funding Systems in the United States Do Not Persist"*, Teacher College Record,* Volume 114, 030301, March 2012. Accessed

from meeting materials of May 6 2015 hearing, https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/72137. Accessed 11/14/16.

[105] Jones, Dennis P. "Outcomes-Based Funding: The Wave of Implementation", 2013, http://www.nchems.org/pubs/detail.php?id=155. Accessed 9/25/16.

[106] Postsecondary Funding Distribution Models, op. cit., p.10

[107] *Strategic Plan*, p. 24., op. cit.

[108] Babson Study: Distance Education Enrollment Growth Continues, February 29, 2016, http://onlinelearningconsortium.org/news_item/babson-study-distance-education-enrollment-growth-continues-2/. Accessed 9/25/16.

[109] University of Southern California. "The education of a Lifetime", http://gerontology.usc.edu/students/what-to-expect-in-online-learning/. Accessed 9/25/16.

[110] Miller, Georgie. "On-Campus vs. Online Degrees: Which One is Better?", July 24, 2014, http://www.worldwidelearn.com/education-articles/online-vs-campus.htm. Accessed 9/25/16.

[111] President Barack Obama, White House Office of Science and Technology Policy. Accessed April 10, 2013 at http://www.whitehouse.gov/ostp.

[112] National Academies of Sciences, Engineering, and Medicine. 2016. "Developing a National STEM Workforce Strategy: A Workshop Summary". Washington, DC: The National Academies Press. doi: 10.17226/21900.

[113] National Research Council. (2012). "A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Committee on a Conceptual Framework for New K-12 Science Education Standards". Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

[114] Honey, Margaret, Greg Pearson, and Heidi Schweingruber, Editors. "STEM Integration in K-12 Education", National Academies Press, https://www.nap.edu/catalog/18612/stem-integration-in-k-12-education-status-prospects-and-an agenda for research. Accessed 9/25/16.

[115] Vital Signs: Change the Equation, http://vitalsigns.changetheequation.org/state/Oregon/. Accessed 9/25/16

[116] Economic Modeling Specialists, International, 2015, in Vitalsigns.

[117] Ibid.

[118] STEM Strategic Plan, https://www.oregon.gov/HigherEd/Documents/HECC/2016 Full Commission Meetings/06_June-9-16/15.0STEMStrategicPlan_presentation.pdf. Accessed 9/27/16.

[119] Conversation with Mark Lewis, STEM Director, office of the Chief Education Officer, 4/17/15.

[120] Pacific Northwest Louis Stokes Alliance for Minority Participation (PNW LSAMP) Impact Report, 2015.

[121] Ibid.

[122] Oregon State University: STEM Academy, http://stemacademy.oregonstate.edu/. Accessed 9/25/16.

[123] Oregon Alliance for Minority Participation, http://oramp.oregonstate.edu/. Accessed 9/25/16.

[124] STEM Core University of Oregon, http://stemcore.uoregon.edu/about/. Accessed 9/25/16.

[125] HECC Strategic Plan.

[126] Atkinson, Richard C., and William A. Blanpied. "Research Universities: Core of the US science and technology system", *Technology in Society* 30 (2008) 30–48, http://rca.ucsd.edu/speeches/TIS_ResearchUniversitiesCoreoftheUSscienceandtechnologysystem1.pdf. Accessed 9/25/16.

[127] Ibid.

[128] Ibid.

[129] Ibid.

[130] "National Science Board Science & Engineering Indicators 2016", https://www.nsf.gov/statistics/2016/nsb20161/#/. Accessed 9/25/16.

[131] Hill, Kent. "University Research and Local Economic Development," 2006, Arizona State University, School of Business. Accessed at http://www.bgsu.edu/offices/econdev/univResearch.pdf.

[132] Greif, Andrew. "The Oregon Ducks are No. 1 — in athletic department revenue", May 27, 2015, http://www.oregonlive.com/ducks/index.ssf/2015/05/the_oregon_ducks_are_no_1_in_a.html. Accessed 12/6/15.

[133] ibid.

[134] Sports Lottery Account, Oregon Laws http://www.oregonlaws.org/ors/461.543. Accessed 9/1/16.

[135] Azziz, Ricardo. "The Value of college athletics: Let's not throw the baby out with the bathwater", January 10, 2015, *Huffington Post,* http://www.huffingtonpost.com/dr-ricardo-azziz/the-value-of-collegiate-a_b_6108674.html. Accessed 9/5/16.

[136] Sternberg, Robert J. "College Athletics: Necessary, not just nice to Have", *Business Officer Magazine*, http://www.nacubo.org/Business_Officer_Magazine/Business_Officer_Plus/Bonus_Material/College_Athletics_Necessary_Not_Just_Nice_to_Have.html. Accessed 9-4-16

[137] Frank, Robert H. Knight Foundation Commission Report, *Challenging the Myth: A Review of the Links Among College Athletic Success, Student Quality and Donations*, May 2004, http://www.knightcommission.org/images/pdfs/kcia_frank_report_2004.pdf. Accessed 9/26/16.

[138] Theen, Andrew. "Universities go it alone, and they like it", *The Oregonian*, 5/16/16.

[139] Ibid.

[140] Recorded meeting before House Committee for Higher education and Workforce Development, http://oregon.granicus.com/MediaPlayer.php?clip_id=10857. Accessed 9/26/16.

[141] Theen, Andrew. "University presidents hire director to lobby Legislature", *The Oregonian*, 7/18/16.

[142] Read, Richard. "Legislature boosts public college, university funding by 22 percent -- largest increase in two decades", *The Oregonian*, 7-8-15, http://www.oregonlive.com/education/index.ssf/2015/07/legislature_boosts_public_coll.html. Accessed 7-5-15.

[143] Theen, Andrew. "Maples offers parting thoughts," *The Oregonian*, http://tablet.olivesoftware.com/Olive/Tablet/Oregonian/SharedArticle.aspx?href=ORE%2F2016%2F06%2F30&id=Ar00303. Accessed 7-5-16.

[144] Theen, Andrew. "Colleges look to other states for students to increase revenue", *The Oregonian,* August 29, 2016.

[145] "2017-19 Agency Request Budget (ARB)", http://www.oregon.gov/HigherEd/Documents/HECC/FA/2016/08_Aug-10-16/4.0_Agency_Request_Budget_Overview.pdf. Accessed 9/26/16.

[146] Theen, Andrew. "Oregon commissioners approve 'aggressive and ambitious' higher education budget", *The Oregonian/OregonLive*, August 11, 2016, http://www.oregonlive.com/education/index.ssf/2016/08/post_38.html. Accessed 11/12/16.

[147] Hammond, Betsy. "Under achieving Oregon: Schools perform in the bottom third nationally", June 2015, http://www.oregonlive.com/education/index.ssf/2015/06/underachieving_oregon_state_ra.html. Accessed 8/2016.

[148] Hammond, Betsy. "Oregon academic achievement mostly flat in second year of common core tests", *The Oregonian/Oregonlive,* http://www.oregonlive.com/education/index.ssf/2016/09/oregon_academic_achievement_mo.html, 9-8-16. Accessed 9/13/16.

[149] Anderson, Janna Q., Jan l. Boyles, and Lee Rainie. *Pew Research Center's Internet& American Life Project, The Future of the internet*, July 2012, http://www.pewinternet.org/files/old-media/Files/Reports/2012/PIP_Future_of_Higher_Ed.pdf. Accessed 12/11/16.

[150] Sabado, Joe. "Social Media in Higher Education – Challenges/Opportunities, Student Affairs and Technology Leadership", May 2012, http://joesabado.com/2012/05/social-media-in-higher-education-challengesopportunities/. Accessed 9/13/16.

[151] Lederer, Karen. Pros and Cons of Social Media in the classroom , Campus Technology, January 19, 2012, https://campustechnology.com/articles/2012/01/19/pros-and-cons-of-social-media-in-the-classroom.aspx?m=2. Accessed on 9-13-16.

[152] KOIN 6, "PSU students protest armed security guards," May 10, 2016, http://koin.com/2016/05/10/psu-students-to-protest-armed-security-guards/. Accessed 12/11/16.

[153] Johnson, Eric M. "Weapons common on Oregon Campuses despite gun-free zone," October 5, 2015, *Reuters,* http://www.reuters.com/article/us-usa-oregon-shooting-campus-idUSKCN0RZ1D820151005. Accessed 9/13/16.

[154] Ibid.

[155] Cornell University Law School, Legal Information Institute, 20 U.S. Code 1001 – General definition of higher education, https://www.law.cornell.edu/uscode/text/20/1001. Accessed 8/13/16.

[156] The Free Dictionary by Farlex, http://legal-dictionary.thefreedictionary.com/Colleges+and+Universities. Accessed 9/13/16.

[157] Organization of U.S. Education: Tertiary Institutions, International Affairs Office, U.S. Department of Education, Feb 2008, http://www2.ed.gov/about/offices/list/ous/international/usnei/us/postsec-inst.doc. Accessed 9/26/16.

[158] *The glossary of Education Reform, Career and Technical Education,* http://edglossary.org/career-and-technical-education/. Accessed 10/16/16.

[159] Office of Private Post Secondary Education. Private Career Schools. http://www.oregon.gov/HigherEd/Pages/priv_career_schools.aspx. Accessed 10/16/16.

[160] Vocational Degree Definition | Investopedia, http://www.investopedia.com/terms/v/vocational-degree.asp#ixzz4NepXtbzH. Accessed 10/16/16.

[161] US. Department of Education, "FAQ about accreditation." http://ope.ed.gov/accreditation/faqaccr.aspx. Accessed 9/13/16.

[162] Accrediting Council on Education in Journalism and Mass Communication. Accessed at http://acejmc.ku.edu/STUDENT/ACCREDDEF.SHTML, on 9/13/16.

[163] EOU: Common Data Set, https://isdepot.eou.edu/public/ir/CDS/CDS_2015_16.pdf. Accessed 9/26/16.

[164] Eastern Oregon University, https://bigfuture.collegeboard.org/college-university-search/eastern-oregon-university. Accessed 9/26/16.

[165] EOU Cost of Attendance, https://www.eou.edu/fao/coa/. Accessed 9/26/16.

[166] https://www.eou.edu/visitor/, and http://www.collegefactual.com/colleges/eastern-oregon-university/academic-life/faculty-composition/. Accessed 9/26/16.

[167] Eastern Oregon University: School of Nursing, La Grande Campus, https://www.eou.edu/ohsu/. Accessed 9/26/16.

[168] EOU Foundation, https://www.eou.edu/foundation/. Accessed 9/26/16.

[169] "Oregon Tech Enrollment Rises 12%" Ore*gon Tech*, http://www.oit.edu/news/2015/11/05/oregon-tech-enrollment-rises-12-percent. Accessed 10/14/16.

[170] OIT Cost, http://www.oit.edu/admissions/freshman/cost. Accessed 9/26/16.

[171] OIT Academic Life, http://www.collegefactual.com/colleges/oregon-institute-of-technology/academic-life/. Accessed 9/26/16.

[172] Oregon Tech Campuses & Partnerships, http://www.oit.edu/visitors-info/about/locations. Accessed 9/26/16.

[173] Oregon Tech Degree Programs, http://www.oit.edu/academics/degrees. Accessed 9/26/16.

[174] Oregon Tech Graduate Studies, http://www.oit.edu/academics/graduate-studies. Accessed 9/26/16.

[175] "Oregon Institute of Technology", http://colleges.usnews.rankingsandreviews.com/best-colleges/oit-3211. Accessed 12/11/16.

[176] Oregon State Spring 2016 Enrollment, http://oregonstate.edu/admin/aa/ir/sites/default/files/enroll-spring-2016.pdf. Accessed 9/26/16.

[177] OSU Cost of Attendance, http://financialaid.oregonstate.edu/review_costofattendance. Accessed 9/26/16.

[178] OSU Common Data Set, http://oregonstate.edu/admin/aa/ir/sites/default/files/cds-2015-16.pdf. Accessed 9/26/16.

[179] http://www.collegefactual.com/colleges/oregon-state-university/academic-life/faculty-composition/. Accessed 9/26/16.

[180] OSU Education & General Fund Budget: Fiscal Year 2016, http://fa.oregonstate.edu/sites/fa.oregonstate.edu/files/budget/annual-budget/fy2016_eg_budget_book_for_web.pdf. Accessed 9/26/16.

[181] About OSU, http://oregonstate.edu/about/. Accessed 9/26/16.

[182] http://oregonstate.edu/main/about. Accessed 9/26/16.

[183] http://colleges.usnews.rankingsandreviews.com/best-colleges/oregon-state-university-209542/overall-rankings. Accessed 9/26/16.

[184] http://osufoundation.org/news/pressreleases/current/0131_1billiongoalmet/. Accessed 9/26/16.

[185] "Oregon State University celebrates record year for fundraising," July 16, 2015, http://oregonstate.edu/ua/ncs/archives/2015/jul/oregon-state-university-celebrates-record-year-fundraising. Accessed 9/26/16.

[186] http://www.collegefactual.com/colleges/portland-state-university/academic-life/faculty-composition/. Accessed 9/26/16.

[187] Portland State Profile, https://www.pdx.edu/profile/snapshot-portland-state, PSU Adopted Expenditure Budget: 2016-2017, http://www.pdx.edu/budget/sites/www.pdx.edu.budget/files/FY16 to FY17 E%26G Budget Crosswalk.pdf. Accessed 9/26/16.

[188] http://www.pdx.edu/syndication/sites/www.pdx.edu.syndication/files/QuickFactInsert2-14Final8.5x11.pdf. Accessed 9/26/16.

[189] http://colleges.usnews.rankingsandreviews.com/best-colleges/portland-state-3216. Accessed 9/26/16.

[190] PSU Endowment Fund Performance, http://www.psuf.org/sites/default/files/fileattachments/general/page/268/endowment_historical_return_w_asset_allocation_jun15.pdf. Accessed 9/26/16.

[191] Southern Oregon University Fact Book, http://www.sou.edu/assets/ir/docs/Fact_Book_2015/Fact_Book_2015_-_Electronic.pdf. Accessed 9/26/16.

[192] SOU Academics, http://www.sou.edu/academics.html. Accessed 9/26/16.

[193] SOU Foundation Financial Statements: June 30, 2014 and 2015, http://giving.swp.sou.edu/wp-content/uploads/sites/5/2013/10/SOU-Foundation-FS-pdf-Final-1.pdf. Accessed 9/26/16.

[194] http://colleges.usnews.rankingsandreviews.com/best-colleges/southern-oregon-university-3219/paying. Accessed 9/26/16.

[195] University of Oregon Profile, https://admissions.uoregon.edu/profile.html. Accessed 9/26/16.

[196] UO Cost of Attendance, http://financialaid.uoregon.edu/cost_of_attendance. Accessed 9/26/16.

[197] UO Snapshot 2015, http://ir.uoregon.edu/sites/ir.uoregon.edu/files/StateSnapshot2015.pdf. Accessed 9/26/16.

[198] UO FY 2016 Projected Operating Budget Expenditures, http://pages.uoregon.edu/baoforms/bao_drupal_6/sites/brp.uoregon.edu/files/brp/reports_analysis/FY16 Budget Request for Board_Expenditure, Revenue and Capital.pdf. Accessed 9/26/16.

[199] UO Academics, http://uoregon.edu/academics. Accessed 9/26/16.

[200] http://colleges.usnews.rankingsandreviews.com/best-colleges/university-of-oregon-3223. Accessed 9/26/16.

[201] "Western Oregon University General information, common Data Set 2015- 2016," http://www.wou.edu/ucs/ir/ir_reports/CDS_2015-2016.pdf. Accessed 10-14-16.

[202] WOU Cost of Attendance, http://www.wou.edu/finaid/estimated-expenses/cost-of-attendance/. Accessed 9/26/16.

[203] WOU Faculty and Staff, https://www.wou.edu/ucs/ir/ir_reports/faculty_staff_for_web.htm. Accessed 9/26/16.

[204] WOU FY 2016 Budget, http://www.wou.edu/budget/files/2016/01/FY16_Budget_Document.pdf. Accessed 9/26/16.

[205] WOU Academics, http://www.wou.edu/resources/student-resources/academics/. Accessed 9/26/16

[206] http://colleges.usnews.rankingsandreviews.com/best-colleges/western-oregon-university-3209. Accessed 9/26/16.

[207] "Western Oregon University Development Foundation Financial Statements Years Ended June 30, 2015 and 2014," http://www.wou.edu/foundation/files/2015/07/WOUDF-2015-Audit.pdf. Accessed 9/26/16.

[208] OHSU History, http://www.ohsu.edu/xd/about/facts/history.cfm. Accessed 9/26/16.

[209] Growth and Change at OHSU, http://www.ohsu.edu/xd/about/vision/upload/Growth-and-change-2015.pdf. Accessed 9/26/16.

[210] "Economic Impact of Oregon Health and Science University",
http://www.ohsu.edu/xd/about/facts/upload/OHSU_impact_handout_2014.pdf. Accessed 9/26/16.
[211] About OSU Ecampus, http://ecampus.oregonstate.edu/about/. Accessed 9/26/16.
[212] OSU Ecampus Online Degree Programs, http://ecampus.oregonstate.edu/online-degrees/programs.htm. Accessed 9/26/16.
[213] Ecampus Undergraduate Degree Minors, http://ecampus.oregonstate.edu/online-degrees/undergraduate/minors/. Accessed 9/26/16.
[214] Ecampus Chemistry and Lab Courses Online, http://ecampus.oregonstate.edu/online-degrees/undergraduate/online-chemistry-lab-course/. Accessed 9/26/16.
[215] http://www.usnews.com/education/online-education/bachelors/rankings. Accessed 9/26/16.
[216] Inside SOU: Distance Education, http://www.sou.edu/distanceeducation/index.html. Accessed 9/26/16.
[217] Portland State University PSU Online. Accessed at http://www.pdx.edu/psu-online/ on 3/10/15.
[218] Western Oregon University, Division of Extended Programs,
http://www.wou.edu/provost/extprogram/students/onlineprograms.php. Accessed 9/26/16.
[219] Eastern Oregon University Online/Onsite students, http://www.eou.edu/online/. Accessed 9/26/16.
[220] Oregon Tech Online, "Online Degrees & Programs", http://www.oit.edu/online/degrees. Accessed 12/11/16.
[221] "Businesses and government agencies increase Oregon State research funding in 2014," September 2, 2014,
http://oregonstate.edu/ua/ncs/archives/2014/sep/businesses-and-government-agencies-increase-oregon-state-research-funding-2014. Accessed 9/26/16.
[222] http://oregonstate.edu/ua/ncs/archives/2014/sep/businesses-and-government-agencies-increase-oregon-state-research-funding-2014. Accessed 9/26/16.
[223] University of Oregon economic Impact of Research, http://research.uoregon.edu/about/economic-impact. Accessed 9/26/16.
[224] University of Oregon Sponsored Projects Services Annual Report - Fiscal Year 2014 07/01/2013 – 06/30/2014
http://orsa.uoregon.edu/web/reports/pdf/FY2014_Full.pdf. Accessed 2/10/15.
[225] "UO made steady gains in research and innovation in FY 2014," September 2014,
http://uonews.uoregon.edu/archive/news-release/2014/9/uo-made-steady-gains-research-and-innovation-fy-2014. Accessed 9/26/16.
[226] Ibid.
[227] http://www.ous.edu/sites/default/files/contdiv/annual_financial_reptg/fy2013_ous_afs.pdf, not available.
[228] *Portland State University Research and Strategic Partnerships: quarterly Review,*
http://www.pdx.edu/research/sites/www.pdx.edu.research/files/Newsletter Fall 14 11,24,14.pdf. Accessed 9/30/16.
[229] *PSU Research and Strategic Partnerships: 3rd Year Report,*
http://www.pdx.edu/research/sites/www.pdx.edu.research/files/3rd year report reviewed 7,7,14_0.pdf. Accessed 11/14/16.
[230] OHSU Research Highlights, http://www.ohsu.edu/xd/research/about/research-highlights.cfm. Accessed 9/26/16.
[231] *Oregon University System2014 Annual Financial Report*, http://sos.oregon.gov/audits/Documents/2014-29.pdf. Accessed 9/26/16.
[232] SOU Research, https://inside.sou.edu/research/index.html. Accessed 11/29/16.
[233] https://www.eou.edu/rural/category/crs-projects/. Accessed 10/2/16.
[234] "HECC 2015 Legislative Summary," http://www.oregon.gov/HigherEd/Documents/HECC/2015 Full Commission Meetings/11-Nov-12-15/2.2HECC2015LegislativeSummary.pdf. Accessed 9/26/16.

THANK YOU

The League of Women Voters of Oregon would like to that the following individuals who provided interviews or technical assistance for this project. Without their cooperation, preparation of this paper would not have been possible.