A Gender Analysis of Oregon's Student Success and Completion Model August 2020

Technical Report · August 2020

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Executive Summary

This report provides a gender analysis of Oregon's higher education funding model, the Student Success and Completion Model (SSCM), which determines the distribution of state funds to the seven public universities through three categories: mission differentiation, activities-based funding (assessed through student credit hours), and outcomes-based funding (measured as degree completions). Cost weights are applied to student credit hours and degree completions, adjusting for course-/degree-level, program duration, and type. Additional area-of-study weights are applied to completions in priority areas, and Bachelor's degrees earned by priority populations are awarded stackable bonus weights. While this cost-weighting system (specifically, the program cost-weights) is meant to adjust for the differences in costs associated with different programs, in combination with the area-of-study bonuses, it may result in gendered funding discrepancies. Following a gender-responsive budgeting approach, gender-disaggregated statistics on Bachelor's degrees completed by academic program are presented. As the funding model only rewards activities and outcomes by residents, analysis is restricted to Bachelor's degrees completed by Oregon residents. Data covers degree completions from all seven public universities from 2016-2019, as well detailed data on Southern Oregon University, specifically. Programs are ranked by their final cost-weight from highest to lowest, illuminating gendered trends in completions by cost-weight. Programs that qualify for the area-of-study additional weighting bonus are highlighted.

Major Findings:

- Although budgetary decisions may appear to be objective and gender-neutral by excluding gender as a unit of analysis, some budgetary decisions regarding the allocation of resources can explicitly and/or implicitly privilege men.
- The lowest cost-weighted disciplines are female-dominated (primarily the social sciences and humanities). Universities graduating students from more female-dominated disciplines thus receive less funding on average.
- Some male-dominated STEM fields receive multilevel prioritization in each of the Mission Differentiation Funding, Activity-Based Funding, and Outcomes-Based Funding without transparent evidence for the need for this prioritization across each area of funding.

Key Take-Aways:

- Rather than being gender-neutral, the SSCM appears to be gender-blind; in not actively acknowledging or addressing gender as a category, it fosters gender inequality in our state.
- Greater transparency is needed in the methods, rationale, and evidence especially in terms of outcomes-based weighting used in the model.
- Gender-responsive budgeting requires continual dialogue, monitoring, and evaluation of new outcomes with attention to the gendered impacts of funding.
- Future work should include an intersectional analysis of disciplines graduating underserved and marginalized students.

Introduction

Women make up the majority of those that earn bachelor's degrees at the seven public universities in Oregon. In 2018-2019, 54% of all Bachelor's degrees awarded to Oregon residents were awarded to women. Nevertheless, when it comes to state-funding for higher education, degrees in different programs are not worth the same in the funding model. In fact, after cost-weighting and area-of-study bonuses, one completed degree in Engineering is worth more than two degrees completed in Psychology by students of similar identities[1]; it is significant that the field of Engineering has more men than women students while Psychology has more women than men students.

While these cost-weights are intended to account for the relative costs of providing these courses and degrees, this report examines the potential unintended consequences of these weights in perpetuating gender inequality. Gender is not considered in the funding model, and as women outnumber men in higher education, it may appear on the surface that the funding model well-represents women students. **However, we argue that the supposedly "gender-neutral" approach to this funding model may inadvertently reproduce gender inequality, in effect privileging men students, students in male-dominated fields, and institutions that serve more male-dominated disciplines.**

In this report, we apply a gender perspective to Oregon's funding model, the Student Success and Completion Model (SSCM), guided by gender-responsive budgeting protocols. When it comes to education, we hypothesize that the SSCM impacts students of different genders disproportionatly due to gendered educational trajectories, which are oftentimes the result of social norms and societal discrimination. We present gender-disaggregated statistics on degree completions by program area. We rank academic programs by SSCM "cost-weight category"[2] to assess whether the funding model has a differential impact in the form of resource allocation on different genders. With increasingly limited state-level funding for higher education in the midst of the COVID-19 global pandemic, this analysis is even more imperative[3]. **This research emphasizes that although budgetary decisions appear to be objective and gender-neutral by excluding gender as a unit of analysis, budgetary decisions regarding the allocation of resources can explicitly and implicitly privilege men.**

The goal of this report is to assess whether SSCM's budgetary allocations follow the HECC's policy commitments to their equity lens. Although women are attending and completing college at higher rates than men in Oregon (Oregon HECC 2019a; see Figure 1) and nationally (US Dept of

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[1] Additional weighting bonuses are applied to degrees completed by low-income students, minority students, rural students, and student Veterans; this comparison assumes the students are similar across these four prioritized dimensions.

[2] The term "cost-weighting" is used to describe the differential adjustments in the value of student credit hours and outcomes-based allocation by CIP, course type, and course/degree level in the funding model. They are the same at all public institutions in Oregon and are meant "to account for the relative cost to an institution of providing a degree or course." (Definition from https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=249518)

[3] Women may be further disadvantaged in their education during this epidemic. Women are often responsible for greater care labor, reducing their time for their studies.

Education 2019), women also hold more student loan debt (AAUW 2019a) and a significant gender wage gap persists (AAUW 2019b). The HECC's equity lens demonstrates the state's commitment to "improve educational attainment rates of students who are presently underserved" (Oregon HECC 2017 [2014]); while women are not an underserved population at Oregon institutions overall, women nationally are underserved in the STEM fields. Furthermore, women are overrepresented in the lowest weighted programs in Oregon. **The consequence is that women students are disadvantaged because Oregon universities graduating students from more female-dominated disciplines receive less funding, on average, given that their students graduate with degrees in lower-weighted programs.**[4]

Women are often underrepresented and underserved in STEM fields, and studies demonstrate that various factors contribute to this gender difference. Gender bias, as a form of discrimination, influences perceptions of women as less competent than men in STEM fields (Eaton, Saunders, Jacobson, & West 2020; Roper 2019), which can then also lead women to pursue STEM fields at lower rates than men (Farrell & McHugh 2017). Women who do pursue STEM degrees then earn less than men in STEM-related occupations (Olitsky 2013). Studies further suggest that People of Color (Eaton et al 2020) and LGBQ people (Patridge, Barthelemy, & Rankin 2014) experience discrimination in STEM fields. When utilizing an intersectional approach, Women of Color are particularly disadvantaged within STEM fields (Gándara & Rutherford 2020, Scott & Elliot 2020). Unlike STEM, while women are overrepresented in Healthcare Professional and related degree programs, studies also show that white men graduates from programs such as nursing are likely to experience the "glass escalator," which can encourage their promotion above women and Men of Color in these fields (Williams 1992; Wingfield 2009).

The diversification of male-dominated fields and the importance of producing more graduates in some of those areas is not in dispute. However, evidence suggests that increased funding and recruitment of underserved students does not significantly diversify the field of STEM (Ferrara & Miller 2020). Rather, several researchers point to the assumptions of gender- and race-blind ideology within the culture of STEM, where these biases go unchecked and thus perpetuate inequalities (Ferrara & Miller 2020, see also Eaton et al 2020, Riegle-Crumb et al 2012, Scott & Elliot 2020). In other words, increased funding through mechanisms such as higher cost-weights does not significantly increase more diverse graduates within male-dominated fields such as STEM.

Data and Methodology:

We conducted a gender impact assessment of Oregon's outcomes-based funding model, the SSCM, focusing specifically on the outcomes-based funding category and Bachelor's level degree completions. The SSCM was adopted in 2014 and phased-in during the 2015-2017 biennium to distribute Oregon's state funding to the seven public universities. This includes Portland State University, Oregon State University, University of Oregon, Oregon Institute of Technology,

[4] Assuming that the percentage of students that fall into the 'priority populations' and are thus eligible for the stackable bonus weights per degree completion are similarly represented across programs at the universities.

Southern Oregon University, Western Oregon University, and Eastern Oregon University. The SSCM is composed of three funding categories: mission differentiation funding, activity-based funding, and outcomes-based funding (Oregon HECC 2019b), and the increasing weight the SSCM places on completions (via the outcomes stream) makes it distinct from previous funding models. After mission differentiation funding is allocated, 40% of the remaining budget is committed to activities-based funding and 60% to outcomes-based funding.

The activities-based funding category funds student credit hours (SCH) through a cost-weighting process that takes into account both the program area and course level (BA/BS: Freshman/Sophomore; BA/BS: Junior/Senior; MA/MS; and PhD) of credit hours completed by Oregon residents. This cost-weighting system is meant to adjust for the relative differences in cost associated with providing different academic courses.

The outcomes-based funding category uses data on degree and graduate certificate completions by Oregon residents (and all PhD completions regardless of residency status) and also applies cost-weighting adjustments based on program and degree-level. The cost-weights are meant to adjust the value of each degree to account for the relative cost of providing that degree. Transfer student degrees are discounted. Additionally, area-of-study bonuses are awarded to degree completions in STEM and Healthcare fields, which are weighted at 120%, and Bilingual Education, weighted at 220%. The HECC classifies these as "priority degree areas" and "high-demand and high-reward areas" (Oregon.gov/HigherEd). Lastly, stackable bonus weighting is applied to BA/BS degree completions by underrepresented students which include low-income students (measured by Pell Grant eligibility), underrepresented minority population students[5], rural students, and Veteran students. We focus our analyses on the cost-weighting by program and area-of-study (looking at the 'final cost-weight' that incorporates both of these components) to highlight the resulting gendered differences in funding. Therefore, our analyses do not provide the *actual* outcomes-based funding awarded to universities as we do not apply the additional bonus weights on degrees earned by underrepresented students.

The HECC Office of Research and Data provided gender-disaggregated data on degree completions by Classification of Instructional Program (CIP) codes earned by Oregon residents at the seven universities for five academic years: 2014/2015 through 2018/2019. Southern Oregon University's Office of Institutional Research provided additional de-identified student-level data on degree completions by Oregon residents from academic years 2016/17, 2017/18, and 2018/19. We focus our analysis on Bachelor's degrees awarded to Oregon residents only. Data on cost-weights, area-of-study bonuses, and final cost-weights come from the HECC's SSCM Projection Tool.

[5] "Underrepresented Minority population" consists of resident undergraduate students identified as American Indian/Alaskan Native, Hispanic, Pacific Islander, Black, African American or two or more races if one of those two or more races is one of those listed in this definition.

We follow a gender-responsive budgeting approach for introducing gender into budgetary decision making and resource allocation in higher education. Gender-responsive budgeting is a method of gender mainstreaming, in which gender-disaggregated analyses are used to examine the differential impacts of budgeting decisions. Forms of gender-responsive budgeting were first promoted in relation to the 4th World Conference on Women in Beijing in 1995 (UN Women 2014 [1995]) and encouraged especially in situations in which there are limited state-level resources. This methodology has primarily been applied to higher education funding in the context of European universities through the European Union-funded project "Gendering the Academy and Research: combating Career Instability and Asymmetries (GARCIA)" (Steinthorsdottir, Heijstra, Einarsdottir, & Petursdottir 2016).

In what follows, we present the first task of gender-responsive budgeting: a gender impact assessment, examining the potential for differential impacts by gender in Oregon's current funding model. **However, gender-responsive budgeting also requires continued dialogue, monitoring, and evaluation of new outcomes.** Therefore, this report is meant only to serve as a conversation starter in the process.

To examine the gendered impact, we rank programs by their final cost-weight (from highest weighted to lowest weighted and alphabetical within the same funding tier) and present the gender breakdown of Bachelor's degree completions by men, women, and gender-unknown[6] Oregon residents within each program for all seven public universities. We also present the gender-disaggregated statistics by CIP codes for SOU. An example of the mapping of CIP codes into SOU majors is presented in Appendix Table A4.

Results:

At the broadest level, this analysis shows that STEM fields are consistently male-dominated. About two-thirds of resident Bachelors degrees in STEM fields at the seven universities are earned by men. Per credit hour and per degree completion, these male-dominated disciplines receive more funding than programs spanning the Social Sciences and Humanities through cost-weighting in both the outcomes- and activities-based funding streams. Additionally, each STEM degree is further weighted with an area-of-study bonus.

As Figures 1 and 2 show, overall, 54% of Oregon resident bachelor's degrees are awarded to women, yet only 33% of the 2,842 STEM degrees were awarded to women in AY 2018-2019. In the highest cost-weighted STEM programs of study, Engineering and Engineering-Related Technologies and Technicians, the discrepancies are large: 81% of the 979 degrees and 96% of the 83 degrees, respectively, awarded in AY 2018-2019 in these two programs were awarded to men graduates, see Figure 3. The other prioritized program that receives an area-of-study weighting bonus--Healthcare Professional and Related Programs--is female-dominated, with 76% of the 832 total degrees

[6] Gender is self-reported; the 'unknown' category includes not reported as well as other options available at some schools.

awarded to women in the most recent academic year; however, the total number of students in the male-dominated STEM fields are greater. However, this highest weighted female-dominated field is less female dominated than the highest weighted male-dominated field is male-dominated. Figures 4 and 5 show the relationship between the share of degrees completed by men and final cost-weight in each program. The size of the bubble represents the overall number of degrees completed in that program and programs that receive area-of-study bonuses are colored in green (STEM) and yellow (Health Professions).

These aggregate STEM numbers also obscure some STEM program areas that are female-dominated, most notably, the Biological and Biomedical Sciences. Although both programs receive the 120% STEM Area of Study bonus, Biology has a lower cost-weight than Engineering, meaning degrees awarded in that program are weighted less than Engineering degrees. **Thus, the gendered weighting differences across disciplinary areas may also be present within areas; within STEM, the highly male-dominated field of Engineering is weighted more than the female-dominated field of Biology.**

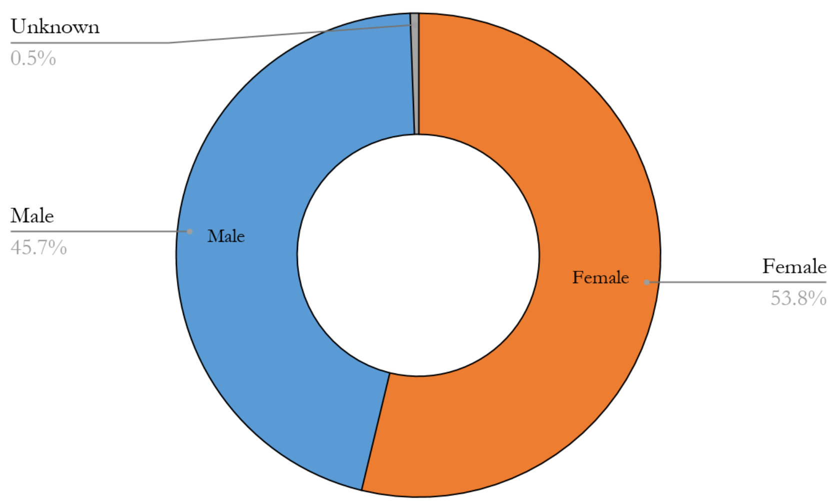

Figure 1. All Completed Bachelor's Degrees by Gender, OR Residents only, AY 2018/19 (N=12,392)

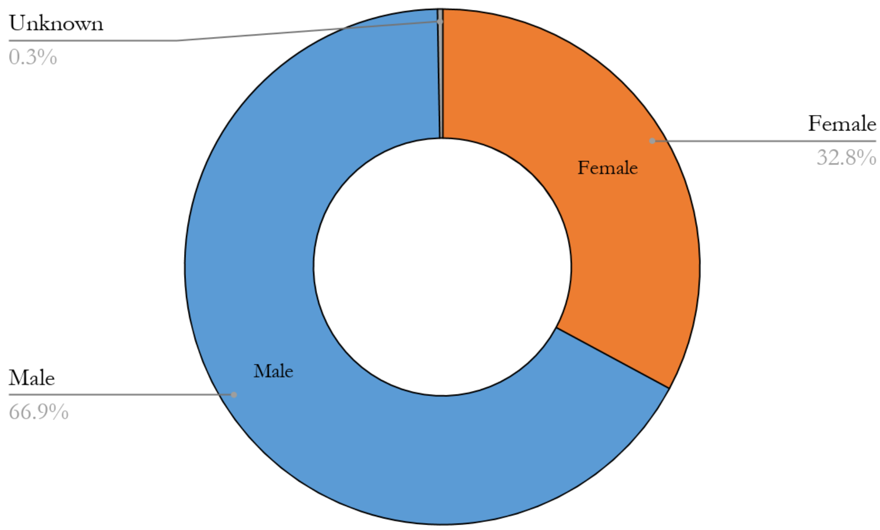

Figure 2. All Completed STEM Bachelor's Degrees by Gender, OR Residents only, AY 2018/19 (N=2,842)

The results of this analysis also show that, on average, the lower-weighted programs in the Social Sciences and Humanities are predominantly completed by women graduates. As shown in Figure 3, up to 65% of degrees in the areas of study including Foreign Languages, Literatures, and Linguistics, English Language and Literature/Letters as well as Liberal Arts and Sciences, General Studies and Humanities are completed by women students. For other areas of study such as Area, Ethnic, Cultural, Gender, and Group Studies, the percentage of women graduates has reached up to 84% in some years. In addition, only 3 out of the 10 lowest weighted areas of study have higher proportions of men graduates than women graduates. This trend recurs in all academic years for which we have data. Refer to Appendix Table A1 for detailed numbers.

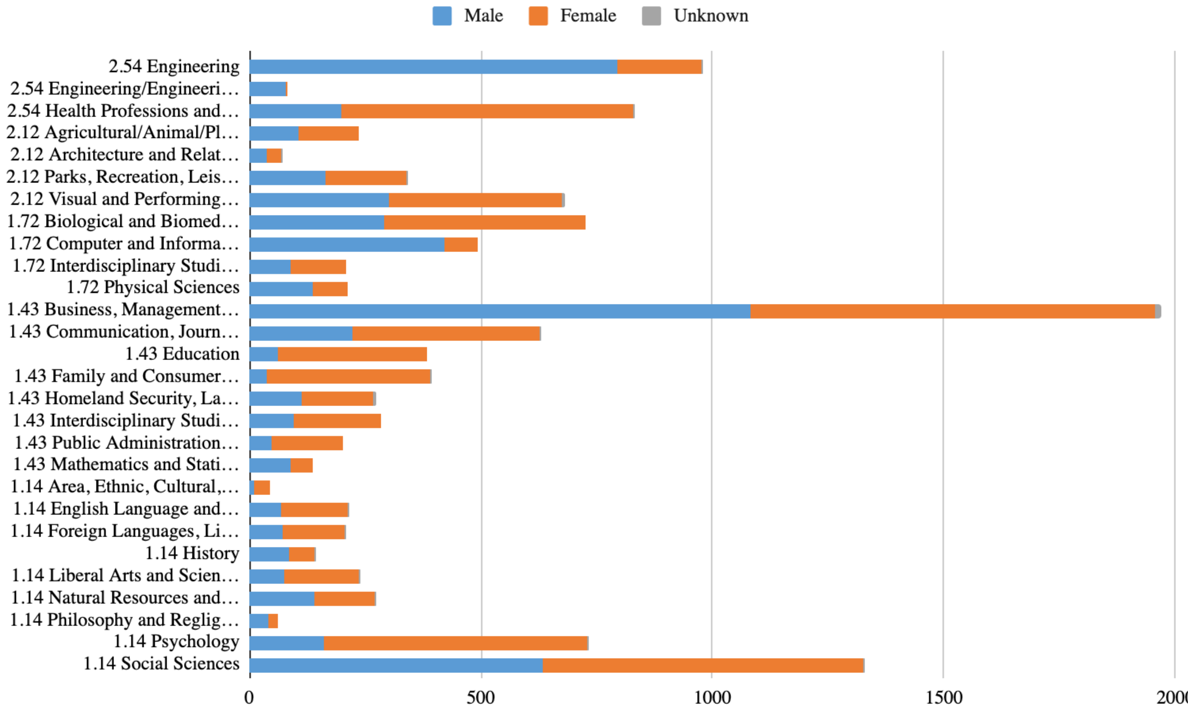

Figure 3. Degree Completions by Program and Gender, Ranked by Cost-Weight, All Public Universities, OR Residents Only, AY 2018-2019

Note: Figure 3 is replicated for SOU data only and presented in the Appendix.

Graduates with unknown gender identifications make up a very small percent of graduates in all areas of study. In the 2018-2019 academic year, the greatest percentage of degrees completed by graduates with unknown gender identifications is in Philosophy and Religious Studies, one of the lowest-weighted areas of study.

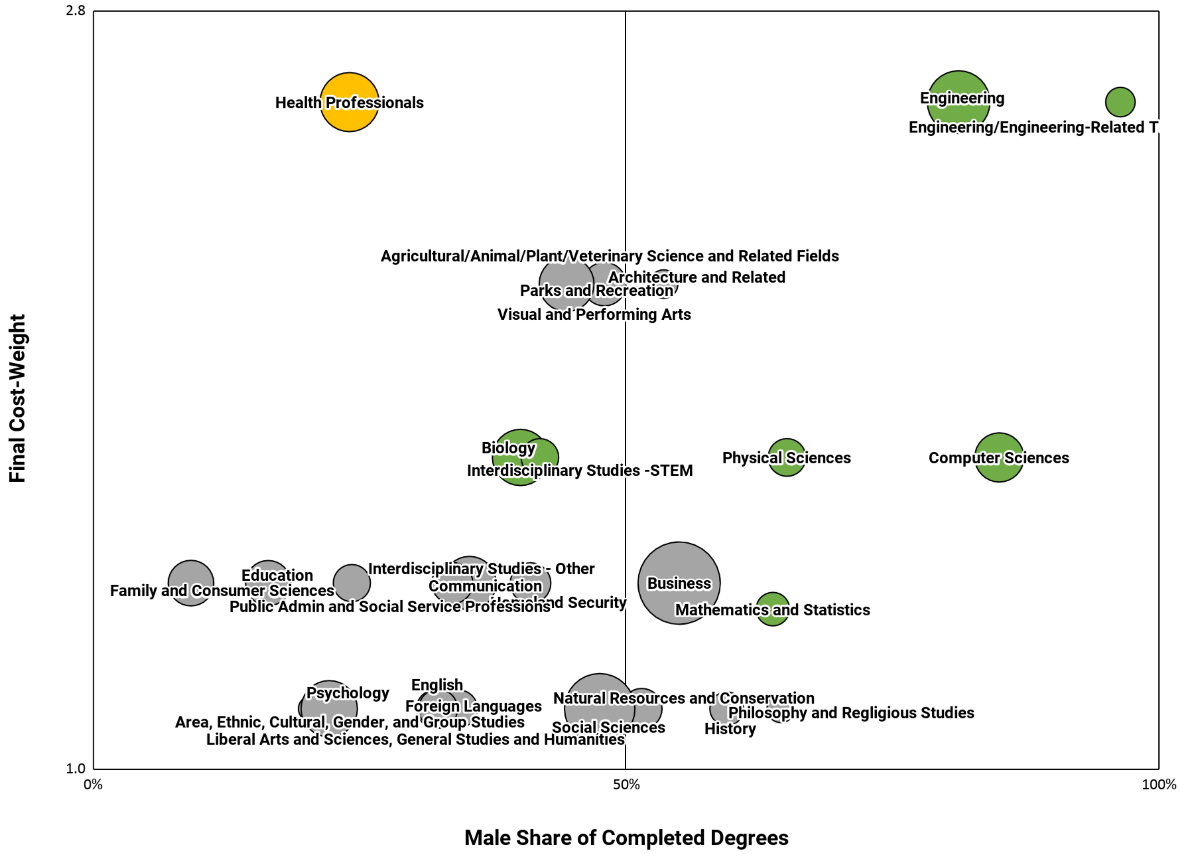

Figure 4. Men's Share of Completed Bachelor's Degrees by Program and SSCM Outcomes-Based Cost-Weight at All Institutions, OR Residents Only, AY 2018-2019

Note: Each bubble in the figure above represents a specific program, labelled with abbreviated CIP description, and depending on its location you can see the share of all completed degrees in that program that are awarded to men (horizontal axis) and the cost-weight by which degree completions are scaled (vertical axis). The size of the bubble represents the total number of degree completions in that program. Green bubbles are those that received a STEM area-of-study bonus and yellow bubbles are those that received another area-of-study bonus. Those bonuses are already incorporated in the final cost-weight.

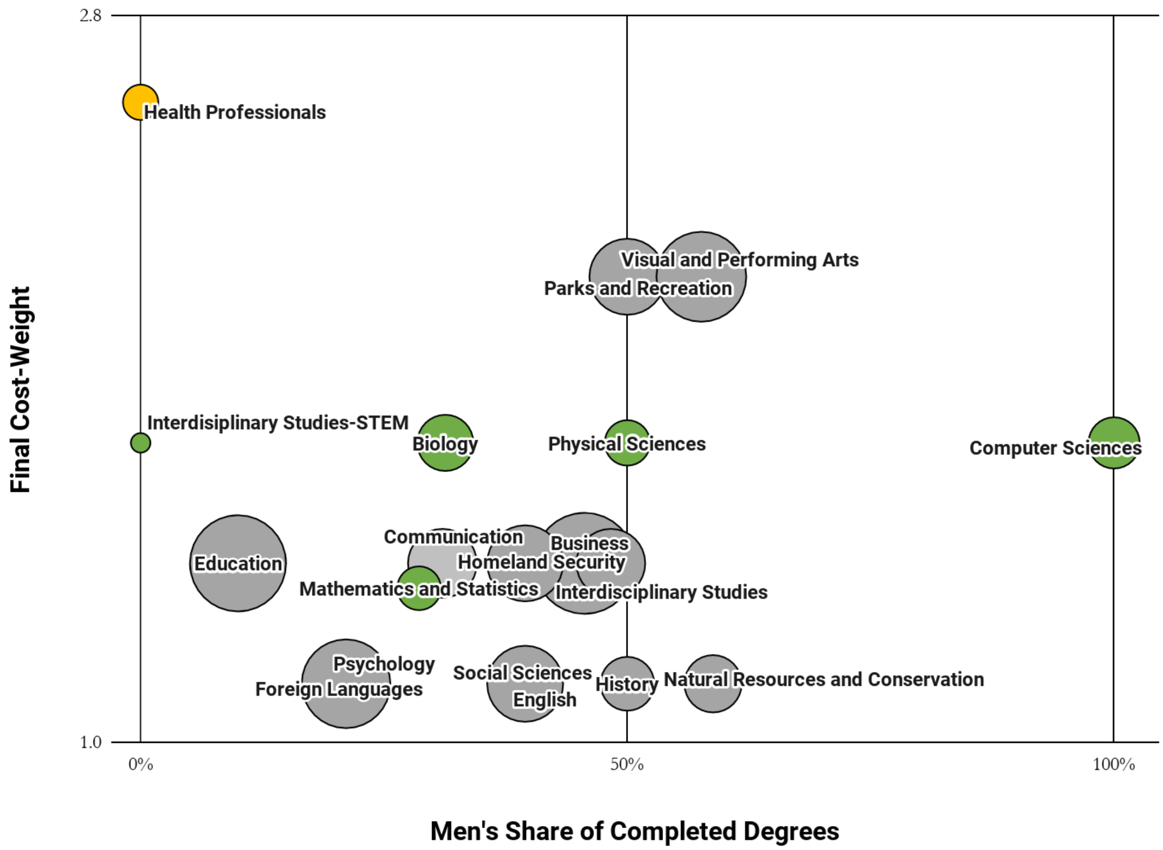

Figure 5. Men's Share of SOU Completed Bachelor's Degrees by Program and SSCM Outcomes-Based Cost-Weight, OR Residents Only, AY 2018-2019

Note: Each bubble in the figure above represents a specific program, labelled with abbreviated CIP description, and depending on its location you can see the share of all completed degrees in that program that are awarded to men (horizontal axis) and the cost-weight by which degree completions are scaled (vertical axis). The size of the bubble represents the total number of degree completions in that program. Green bubbles are those that received a STEM area-of-study bonus and yellow bubbles are those that received another area-of-study bonus. Those bonuses are already incorporated in the final cost-weight.

Discussion, Limitations, and Recommendations:
This report calls attention to some of the gendered consequences for our Oregon students that arise due to the fact that various academic fields are valued differently in the current funding model in both the activities and outcomes funding streams. A gender-aware perspective highlights that the benefits of state education spending are not evenly distributed. **Rather than being gender-neutral, the SSCM appears to be gender-blind; in not actively addressing the category of gender, it fosters gender inequality.** The costs per student credit hour and degree in different disciplines should be re-evaluated so that the price categories can transparently be generated based on empirical evidence.

This analysis is not to argue that particular fields should receive less funding, but that we need additional evidence and transparency in the justification for funding that may inadvertently be increasing particular types of inequity. In other words, if funding per woman student is lower than funding per man student on a statewide level because of these weights, we need to consider the gendered consequences of this model.

Less funding to female-dominated disciplines may have a gendered effect on retention and completion of degrees. Because gaps in state funding are addressed through tuition increases, this may also increase gender inequality for our graduates, in particular because women graduates carry more student loan debt (AAUW 2019a) and are negatively impacted by the gender wage gap (AAUW 2019b) which then affects women graduates' ability to repay student loan debt.

There are several limitations to our study. First, we focused our analysis on the outcomes-based funding stream as this is the category through which 49-50% of total state funding is allocated (Oregon HECC 2019b)[7]. Secondly, we only examined the gendered trends in a subset of degree completions, Bachelor's degrees; however, these represent the vast majority of degree completions in the state. We did not look at the gender breakdown of student credit hour completions by program, but recommend this be assessed in the future. Additionally, we have not completed a gender analysis of the mission differentiation categories. However, because mission differentiation funding includes additional funding for some STEM areas, some male-dominated fields are receiving priority in all three funding categories: mission, activities, and outcomes. Further analysis of mission differentiation may illuminate the additional gendered consequences of the SSCM.

As mentioned, the provided data only allowed for analyses on the gendered breakdown of degree completions by program. This does not pick up on the *actual* outcomes-based funding to the universities as we do not incorporate the additional funding weights awarded to all degree completions by low-income, rural, Veteran, or underrepresented minority students that are awarded on top of the program-specific weights and AOS bonuses.

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[7] As a funding model that prioritizes outcomes-based funding, the SSCM is still relatively in its infancy, and in order to grow into a truly well-rounded and inclusive funding model it needs consistent monitoring and research in order to ensure it does not elicit bias.

Another limitation of this study is that Oregon institutions have been primarily collecting binary gender data; however, this data does not allow us to capture information about transgender students who identify within the gender binary and may also misidentify students who have increasingly been identifying with gender outside the binary (e.g., "unknown" gender identity cannot be considered to be the same as nonbinary or other gender expansive identities). Future gender analysis of the SSCM will benefit from data that better represents our transgender, nonbinary, and gender expansive students' identities and experiences.

Additionally, this analysis does not incorporate other categories such as race/ethnicity. The Oregon HECC (2019a) highlights the increasing challenges for underserved Oregonian students in attending and graduating from Oregon public institutions. Because not only women but also People of Color (Eaton et al 2020) and LGBQ people (Patridge et al 2014) experience heightened discrimination in some male-dominated fields, we feel this is an area that warrants future analysis. An intersectional analysis was beyond the scope of this report but would further illuminate the potential consequences of the SSCM on reducing or perpetuating inequality.

We would also encourage the Oregon HECC to consider weighting bonuses for targeted student populations in addition to those already included (underrepresented minority populations, low income students, rural students, and Veterans). Oregon HECC beliefs and values include a commitment "to improving the postsecondary success of students who have been historically underserved, including students of color, English language learners, economically disadvantaged students, LGBTQ students, and students with disabilities" (Oregon HECC n.d.). We would encourage the HECC to consider bonuses for English language learners, LGBTQ students, and students with disabilities in addition to the four targeted student populations already addressed in the model.

Conclusions:

Research has found that while performance-based funding can improve the overall performance of all colleges and universities, it can also widen the performance gap between them (Favero and Rutherford 2020). Favero and Rutherford (2020) found that the benefits of such a funding model may disproportionately accrue to institutions that are already positioned to be better performers. Hagood (2019) also found that among public four-year institutions, high-resource institutions are more likely to benefit from performance-based funding than lower-resource institutions. Findings from case narratives in research from the state of Tennessee highlight similar sentiments: respondents from a regional university argue that the funding system seems designed to benefit the flagship, and largest, public institution in the state (Ness et al. 2015). The end result is a widening of the outcomes gap between universities (Favero and Rutherford 2020).

Researchers have found similar results among historically Black colleges and universities (HBCUs); performance-based funding policies adversely affected graduation rates at HBCUs relative to non-

HBCUs (Favero and Rutherford 2020). These results imply that such outcomes-based funding models may have unintended consequences in terms of differentially funding institutions based on the racial-composition and gender-composition (as explored in our report) of the student population. These effects can translate into very real outcomes gaps. In fact, research finds that among 2-year institutions in Texas and Washington, those designated as minority-serving institutions (MSIs) receive the same or less per-student state funding than non-MSIs under performance-based funding models and are specifically disadvantaged under models that emphasize degree completions (Li et al. 2018).

Therefore, by assuming "a level playing field" (Ness et al. 2015) among universities and colleges and by failing to consider historical and institutional context seemingly objective performance-based funding policies can be biased towards rewarding already higher-resourced and better-performing institutions. Although the premiums, or additional cost-weights, applied to degree completions by these target populations are helpful, Ness et al. (2015) argue that, in the case of Tennessee, such premiums are unable to offset the difficulties faced by those student populations.

Similarly, the findings in our paper emphasize that by failing to account for gender norms and barriers that have historically resulted in a lack of gender diversity (the focus of our report) but also a lack of racial and ethnic diversity in STEM, the STEM bonuses in Oregon's SSCM result in gender-biased funding. While recent work has found that STEM incentives under performance-based funding models are successful in terms of increasing both the total number of STEM bachelor's degrees and the share of all bachelor's degrees that are in STEM fields, the research also has implications for gender bias (Li 2020). Li finds that institutions with higher proportions of women students awarded fewer degrees in STEM fields and cautions that such incentives may encourage disinvestment in other (more female-dominated) programs in the social sciences, humanities, and arts which may already be disadvantaged in terms of their ability to secure external grant funding. In the case of Oregon and the SSCM explored in this paper, smaller, regional universities have less of a financial 'cushion' to help fill any gaps in state funding. Although not necessarily causal, this implies that in most cases, any reduction in state funding more than likely must be offset by student tuition increases.

After reviewing the model, we understand the importance of activities-based weights that prioritize some fields, including STEM, as these fields can be more costly to provide. What seems to be a concern is the multilevel prioritization of these male-dominated fields in *both* the activities-based weights and the outcomes-based weights (and sometimes in the mission differentiation as well) without transparent evidence of the need for or consequences of that *multilevel* prioritization. Transparency in the calculations and reasoning behind weights as well as evidence for the results of current weights would be beneficial, for instance, by providing evidence that the cost-weights accurately reflect cost differences across programs and that specific academic disciplines defined as high-demand and high-reward benefit the State of Oregon. Some questions to consider are whether graduates in higher weighted disciplines, particularly male-dominated disciplines of concern in this report, stay in Oregon, thus economically contributing to communities in these areas, and if there is evidence that the current weights demonstrably contribute to higher levels of graduation in these fields, especially for women and People of Color. This evidence is particularly important given that the current weighting may be disadvantaging our women students and reproducing gender inequality in our state.

Appendix:

Table A1: Resident Bachelor's Degrees by Gender and Program, All Public Universities

			2016-17				2017-18				2018-19			
CIP	Name	Weight	Fem	Mal	Unk	N	Fem	Mal	Unk	N	Fem	Mal	Unk	N
14	Engineering	2.54	18%	81%	0%	915	17%	82%	1%	971	18%	81%	0%	979
15	Eng. & Related Technologies	2.54	9%	91%	0%	97	12%	88%	0%	77	4%	96%	0%	83
51	Health Professions	2.54	75%	25%	0%	909	77%	23%	0%	896	76%	24%	0%	832
01	Agricultural/ Animal/Plant /Veterinary Sciences	2.12	56%	44%	0%	241	63%	36%	1%	236	56%	44%	0%	237
04	Architecture	2.12	43%	57%	0%	77	51%	49%	0%	83	45%	54%	1%	71
31	Parks and Recreation	2.12	49%	51%	0%	324	55%	45%	0%	337	51%	48%	1%	342
50	Visual/Performing Arts	2.12	58%	42%	1%	671	58%	41%	0%	647	55%	44%	1%	680
11	Computer Sciences	1.72	15%	85%	1%	393	14%	85%	1%	409	15%	85%	0%	494
26	Biology	1.72	64%	36%	1%	784	59%	40%	1%	722	60%	40%	0%	726
30xx	Interdiscip. Studies STEM	1.72	58%	42%	0%	216	57%	42%	1%	207	57%	42%	1%	210
40	Physical Sciences	1.72	30%	70%	0%	228	33%	67%	0%	225	35%	65%	0%	212
09	Commun	1.43	64%	36%	0%	571	64%	36%	1%	599	64%	35%	0%	629
13	Education	1.43	87%	13%	0%	322	85%	15%	0%	331	84%	16%	0%	384
19	Family and Consumer Sciences	1.43	92%	8%	0%	405	90%	10%	0%	437	90%	9%	1%	393
30xx	Interdiscip. Studies - Other	1.43	72%	28%	0%	261	70%	30%	0%	284	66%	34%	1%	285
43	Homeland Security, etc	1.43	50%	49%	2%	243	56%	43%	1%	289	57%	41%	2%	273
44	Public Admin	1.43	75%	25%	0%	215	81%	19%	0%	227	76%	24%	0%	202
52	Business	1.43	45%	55%	0%	1,871	46%	53%	1%	1,976	44%	55%	1%	1,970
27	Mathematics and Statistics	1.37	32%	68%	0%	131	23%	77%	0%	122	36%	64%	1%	138

03	Natural Resources and Conservation	1.14	50%	49%	1%	321	49%	50%	1%	330	48%	51%	1%	274
05	Area, Ethnic, Cultural, Gender, and Group Studies	1.14	84%	16%	0%	56	78%	19%	3%	58	80%	20%	0%	44
16	Foreign Languages	1.14	65%	35%	0%	231	62%	38%	1%	199	64%	34%	1%	210
23	English	1.14	65%	35%	0%	235	67%	32%	1%	244	67%	32%	0%	215
24	Liberal Arts and Sciences	1.14	71%	29%	0%	349	63%	35%	2%	300	66%	32%	1%	238
38	Philosophy /Religious Studies	1.14	28%	72%	0%	50	33%	67%	0%	58	32%	65%	3%	62
42	Psychology	1.14	73%	26%	1%	845	74%	26%	0%	766	77%	22%	1%	732
45	Social Sciences	1.14	53%	47%	1%	1,340	54%	45%	1%	1,279	52%	48%	0%	1,330
54	History	1.14	40%	60%	0%	156	36%	64%	0%	162	39%	59%	1%	143
	Total		**55%**	**45%**	**0%**	**12,457**	**55%**	**44%**	**1%**	**12,471**	**54%**	**46%**	**1%**	**12,392**

Table A2: Resident Bachelor's Degrees by Gender and STEM, All Universities

	2016-17				2017-18				2018-19			
	Fem	**Male**	**Unk**	**N**	**Fem**	**Male**	**Unkn**	**N**	**Fem**	**Male**	**Unkn**	**N**
STEM	35%	65%	0%	2,764	32%	67%	1%	2,733	33%	67%	0%	2,842
Non-STEM	61%	39%	0%	9,693	61%	38%	1%	9,738	60%	39%	1%	9,550
Total	**55%**	**45%**	**0%**	**12,457**	**55%**	**44%**	**1%**	**12,471**	**54%**	**46%**	**1%**	**12,392**

Table A3: Resident Bachelor's Degrees by Gender and Program, SOU Only

CIP	**Name and Weight**		2016-2017				2017-2018				2018-2019			
			Fem	**Male**	**NB**	**N**	**Fem**	**Male**	**NB**	**N**	**Fem**	**Male**	**NB**	**N**
51	Health Professionals	2.54	0.0%	0.0%	0.0%	0	0.0%	0.0%	0.0%	0	100%	0.0%	0.0%	3
31	Parks and Recreation	2.12	48.9%	51.1%	0.0%	45	61.5%	38.5%	0.0%	26	47.4%	50.0%	2.6%	38
50	Visual/Performing Arts	2.12	50.0%	50.0%	0.0%	66	52.2%	47.8%	0.0%	67	42.4%	57.6%	0.0%	59
26	Biology	1.72	76.2%	23.8%	0.0%	21	63.2%	36.8%	0.0%	19	68.8%	31.3%	0.0%	16
11	Computer Sciences	1.72	15.4%	84.6%	0.0%	13	9.1%	90.9%	0.0%	11	0.0%	100%	0.0%	12
30.08	Interdisciplinary Studies-STEM	1.72	0.0%	100%	0.0%	1	0.0%	100%	0.0%	1	0.0%	0.0%	0.0%	0
40	Physical Sciences	1.72	62.5%	37.5%	0.0%	8	46.2%	53.9%	0.0%	13	50.0%	50.0%	0.0%	8

52	Business	1.43	54.3%	45.7%	0.0%	92	54.7%	45.3%	0.0%	95	53.2%	45.6%	1.3%	79
9	Communication	1.43	66.7%	33.3%	0.0%	24	72.2%	27.8%	0.0%	18	69.0%	31.0%	0.0%	29
13	Education	1.43	90.9%	9.1%	0.0%	66	87.9%	12.1%	0.0%	58	90.0%	10.0%	0.0%	70
43	Homeland Security, etc	1.43	55.8%	41.9%	2.3%	43	60.0%	40.0%	0.0%	40	60.5%	39.5%	0.0%	38
30	Interdisciplinary Studies-other	1.43	64.7%	35.3%	0.0%	17	57.6%	39.4%	3.0%	33	41.4%	48.3%	10.3%	29
27	Mathematics and Statistics	1.37	33.3%	66.7%	0.0%	6	0.0%	100%	0.0%	7	71.4%	28.6%	0.0%	7
23	English	1.14	77.3%	22.7%	0.0%	22	55.6%	44.4%	0.0%	18	60.0%	40.0%	0.0%	20
16	Foreign Languages	1.14	75.0%	25.0%	0.0%	8	50.0%	50.0%	0.0%	8	80.0%	20.0%	0.0%	5
54	History	1.14	31.3%	68.8%	0.0%	16	0.0%	100%	0.0%	7	50.0%	50.0%	0.0%	14
3	Natural Resources and Conservation	1.14	30.0%	70.0%	0.0%	10	64.3%	35.7%	0.0%	14	41.2%	58.8%	0.0%	17
42	Psychology	1.14	75.4%	23.1%	1.5%	65	77.4%	22.6%	0.0%	62	78.9%	21.1%	0.0%	57
45	Social Sciences	1.14	77.8%	22.2%	0.0%	54	54.4%	43.9%	1.8%	57	60.5%	39.5%	0.0%	38
	Total		**62.9%**	**36.8%**	**0.3%**	**577**	**59.7%**	**39.9%**	**0.4%**	**554**	**60.1%**	**39.0%**	**0.9%**	**539**

Table A4: Example of CIP Mapping into SOU Major

SOU Major		**CIP**	**CIP Description (abbreviated)**
ART	Art and Art History	50	Visual and Performing Arts
BA	Business Administration	52	Business, Mgmt, Marketing, Related Support Srvcs
BA	Business Administration	30	Multi/Interdisciplinary Studies
BIO	Biology	26	Biological and Biomedical Sciences
BIO	Biology(Master)	3	Natural Resources and Conservation
CHEM	Chemistry	40	Physical Sciences
COMM	Communication	9	Communication, Journalism
CIS	Computer Science	11	Computer and Information Science
CW	Creative Writing	23	English Language and Literature
CCJ	Criminology & Criminal Justice	43	Homeland Security, Law Enforce, Protective Services
ECON	Economics	45	Social Sciences and History
ED	Education	13	Education
EMDA	Emerging Media & Digital Arts	50	Visual and Performing Arts
ENG	English Writing	23	English Language and Literature
ES	Environmental Science and Policy	3	Natural Resources and Conservation
HPEL	Health, P.E., & Leadership	31	Parks, Rec, Leisure, Fitness Studies
HCA	Health Care Administration	51	Health Professions, Related Programs
HIST	History	54	History
IS	International Studies	30	Multi/Interdisciplinary Studies
MATH	Mathematics	27	Mathematics and Statistics

MATH	Mathematics	52	Business, Mgmt, Marketing, Related Support Srvcs
MATH	Mathematics	30.08	Multi/Interdisciplinary Studies-STEM
MUS	Music	50	Visual and Performing Arts
MUS	Music	52	Business, Mgmt, Marketing, Related Support Srvcs
NAS	Native American Studies	5	Area, Ethnic, Cultural, Gender, Group Studies
OAL	Outdoor Adventure and Leadership	31	Parks, Rec, Leisure, Fitness Studies
PHYS	Physics	40	Physical Sciences
POLS	Political Science	45	Social Sciences and History
PSY	Psychology	42	Psychology
PSY	Psychology(Master)	51	Health Professions, Related Programs
SOAN	Sociology and Anthropology	45	Social Sciences and History
THEA	Theater Arts	50	Visual and Performing Arts
UGS	Undergraduate Studies	30	Multi/Interdisciplinary Studies
WLL	World Languages and Cultures	16	Foreign Languages, Literatures, Linguistics

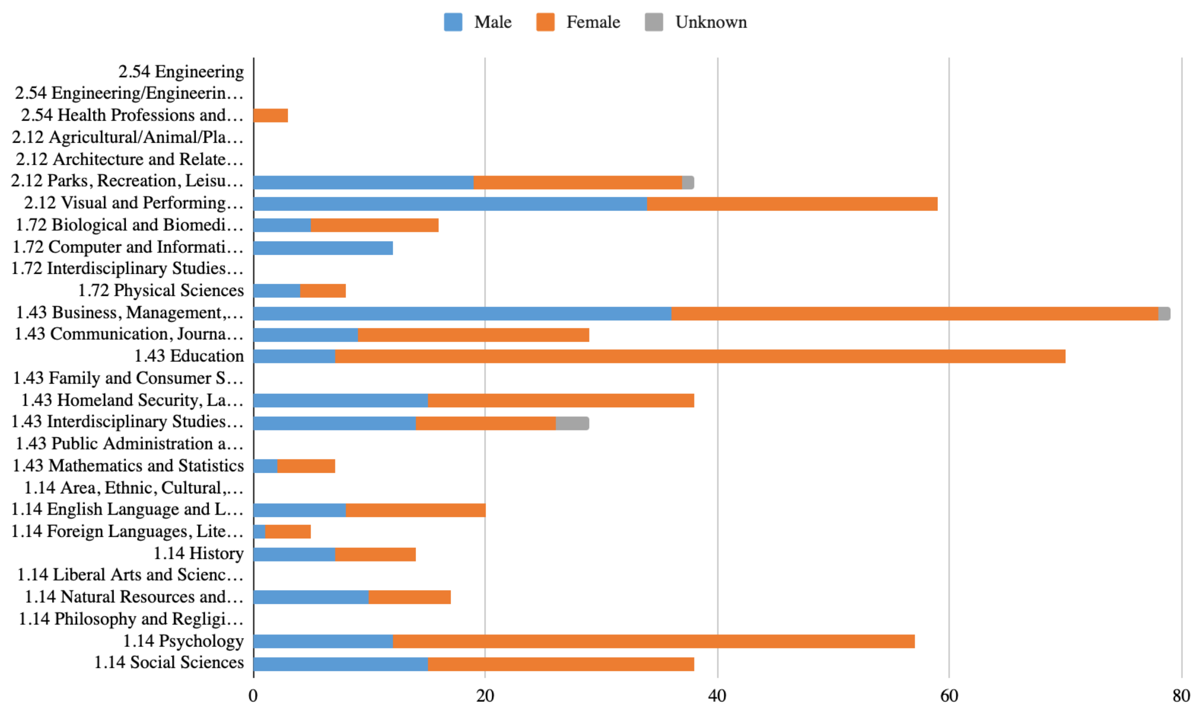

Figure A1. Degree Completions by Program and Gender, Ranked by Cost-Weight, SOU OR Residents only, AY 2018-2019

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