Final Report for the Provost

Curricular and Co-Curricular Offerings and Development Work Group

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Introduction

This summary highlights recommendations resulting from an exploration of the charge posed to our workgroup. This work is part of an effort by the University to consider the development of a whole-university, system-level approach to undergraduate enrollment management, given current challenges we face. These broad challenges include the following.

- Student educational outcomes, including admission to degree programs, are not optimal under current admission and enrollment practices.
- The University is more dependent than ever on revenue from undergraduate student tuition.
- Unit-specific enrollment levels strongly affect the budget of academic units.
- There is misalignment between current enrollment practices and departments' enrollment capacities.
- Undergraduate enrollment goals have been set on a year-to-year basis without attention to the evolving enrollment goals of individual academic programs.

This workgroup is one of four charged by the Provost with developing recommendations for University leaders, and our charge specifically addresses curricular and co-curricular developments and revisions in the context of the challenges listed above. We had some difficulty developing specific recommendations while not knowing what other, related, changes might be recommended or implemented with respect to these challenges. We offer our recommendations with the assumption that a next phase of work would include the integration of all the groups' findings.

Methodology

For each of the three topic areas set out in the charge, we examined current UW practice, explored successful models in place at other institutions, and developed recommendations for moving UW forward. We requested data from UW and external organizations, interviewed colleagues across campus and at other institutions, held three focus groups with students to probe their experience and perceptions, and shared and discussed our findings at weekly meetings. A list of programs and institutions we consulted, data and other resources are listed in the subgroup notes and/or appendices.

Ours is not a comprehensive study of the topics listed in the workgroup's charge letter; nonetheless, promising ideas and models emerged from our research and were vetted in our discussions. We provide detailed responses to the questions and additional rationale for the recommendations, information about current practice, and data (where available) to support these recommendations in the subgroup notes, which follow the recommendations. Here we summarize our findings for each part of our charge.

Summary Recommendations

Part A: Opportunities for academic units to offer programs attractive to students

The first part of our charge asked us to identify opportunities for academic units to offer curricula and degree programs that are attractive to prospective and current students. Work in this area included evaluating the potential of the following:

1. cross-disciplinary curricular programming,
2. undergraduate programming aligned with graduate or professional degree programs, and
3. combined curricular and co-curricular undergraduate programming that lead to both degree and skill attainment (for example, a degree + undergraduate certificate).

Most contemporary societal problems are interdisciplinary; faculty research often involves cross-disciplinary teams and numerous interdisciplinary research centers exist at UW. Students recognize this challenge, and often seek multiple majors, minors, and/or experiences that support the development of ideas and skills from different disciplinary perspectives. There are a small number of interdisciplinary undergraduate programs offered at the UW. Some encouraging cross-disciplinary efforts are underway such as the eScience Institute's Option in Data Science, currently offered in several undergraduate majors, and which can be adapted to any major interested in offering that option. However, current budgetary challenges may act as an impediment to clear and innovative thinking about student-centered, cross-disciplinary, education, and there are significant (and/or perceived) barriers to cross-unit collaboration arising from the UW's budget model as presently construed.

There is currently little alignment between undergraduate and graduate or professional degree programming at the UW, though there have been a large number of one-year Master's programs created over the past few years which could offer promising next steps for graduating seniors. Some concerns arose during our fact-finding with respect to the accessibility and affordability for all applicants, and availability of student services and financial support for fee-based Master's programs in particular. Adding support for student services, financial support, and easy accessibility to programs could yield benefits for students and departments.

We talked with students and advisers more broadly about programs that are "attractive" to students, but focused our work on the three areas of cross-disciplinary, undergraduate-graduate connections, and curricular/co-curricular programming defined in the group's charge. As a result of exploring UW's current offerings and models that have been successful at other institutions, we developed three recommendations for moving forward in this area.

Recommendation 1: Develop opportunities for students to earn designations/alternative credentials that indicate competency in a specific area of study and/or set of skills.

Other universities use degree designations, certificates, co-curricular transcripts, and other forms of alternative credentialing to signal student competencies that complement their major degree program. For example, Georgia Tech has diploma designations for "international plan" (coursework in language and cultural studies plus an experience abroad) and "research proficiency" (research methods courses plus undergraduate research experience). An increase in freshmen enrolling in the international plan at Georgia Tech doubled participation in foreign language and study abroad. The University of Maryland, Florida Atlantic, University of North Carolina Chapel Hill, and other peer institutions also have a "research" or "scholar" diploma designation, indicating mastery of research methods and completion of a significant project. At the UW, the eScience institute has developed a model for a data science Option that can be adapted to any major and could be developed into a less intensive certification available to all students.

Based on focus groups with students and anecdotal data from advisers, this space seems ripe for development, particularly for designations completed with primarily lower division coursework coupled with experiences the UW is already offering such as study abroad, undergraduate research, community engagement, leadership, and internships. We see the possibility of a suite of opportunities being developed for this type of credential. However, we add a caution that there should be careful oversight, as with any other academic program, to avoid over-production and confusion.

Recommendation 2: Create a coordinated structure for undergraduate programming aligned with UW graduate or professional degree programs, and facilitate a process for departments to offer early admission to Master's programs.

A coordinated structure could include: a web-based portal for highlighting opportunities for third and fourth year students to continue on to a Master's program, a process for early admission to Master's programs that units may opt-in to for coordination and facilitation, encouragement for departments to develop fifth year Master's offerings, a template for program structure and processes, and related advising and student services, such as career planning.

Similar to the current program in CSE, and inspired by Stanford's co-terminal Bachelor's/Master's degree program, this could provide a pathway for UW students to gain early admission to a Master's program they enter immediately after completing a Bachelor's degree. It would benefit students in fields where a Master's degree is a standard professional requirement, or for students seeking an additional year to develop expertise and research before launching their careers. Students who arrive at UW with prior college credits may leverage the savings on time to degree by extending their studies through a Master's program. The UW offers 264 Master's degrees and many of these are one-year programs, but there is no centralized information or an undergraduate culture that helps students understand and take advantage of these opportunities. Only two current UW Master's programs offer early admissions for UW undergraduates.

This strategy also offers an opening for UW's professional schools to partner with undergraduate liberal arts majors for a seamless path for students to gain skills that complement a liberal arts degree, such as public policy. Though Stanford's program has existed since the 1960's, the program has grown from approximately 10 to 30 percent of undergraduate students participating in a co-terminal Master's through increased visibility and student services. The majority of these students are in technical fields, but there are substantial numbers who complete liberal arts undergraduate majors and enroll in a complementary, more applied Master's program.

Recommendation 3. Develop strategies that offer students opportunities to engage in the University's community of scholars immediately upon enrollment. Remove barriers to offering cross-disciplinary coursework and incentivize the development of lower division courses that engage students in active learning that draws upon the UW's strengths as a leading research institution with deep ties to the community.

Courses designed around cross-disciplinary exploration of current topics, active learning pedagogies such as the flipped classroom, course research projects, or community engagement, are some ways of introducing students to the university as a community of scholars. The UW already has courses that fit this description, but they are not widely marketed or generally recognized for their added value. A way of displaying these pedagogical approaches in course descriptions for students (in *MyPlan*) could enhance the course selection process and highlight these opportunities for learning.

Peer institutions have developed initiatives such as Stanford's "Thinking Matters", Berkeley's "Big Ideas", and University of Maryland's and University of Texas-Austin's First year research experience programs that get students immediately involved in examining topics that matter to them. Cross-disciplinary courses and courses that employ active learning pedagogies can be expensive and difficult to scale. Cross-disciplinary offerings appear to be especially difficult for departments and faculty to develop in the UW's current budget model. There are strategies for

cost savings that institutions employ, such as using a credit-based model for undergraduate course assistants, as in Berkeley's Intro to Data Science (aka Data 8) program and as used in UW's FIG program, or fund-raising in research areas (each of Maryland's FIRE courses have industry sponsors). However, developing and scaling these types of courses will require institutional investment.

Berkeley's Data Science Initiative, initially driven by a small group of strongly engaged faculty working with students and other stakeholders across campus as a kind of start-up, is a perfect example of unleashed faculty energy driving a bottom-up educational design process. The UW eScience Institute has the potential to create a similar energy. The UW could do more work thinking about how best to enable its faculty to do their best work creating outstanding educational experiences across the institution.

Part B: Strategies for general education for students with prior earned credits.

The second part of our charge asked us to propose strategies by which the UW can adapt general education course offerings to address the needs of students entering the UW with nearly 200,000-quarter credits in 100 and 200-level courses already completed. Work in this area included

1. Reviewing current communication practices regarding credits obtained through AP, IB, Cambridge, Running Start, and UW in the High School and recommended use of those credits to prospective students;

2. Defining the "value added" of our current general education courses over "dual credit" pre-matriculation course offerings;

3. Defining strategies for strengthening the "value added" by general education courses. These strategies may include the development of new general-education offerings in emerging areas of study, or developing general education courses that leverage co-curricular opportunities.

Entering freshmen bring approximately 200,000 college credits with them each year. We examined five years of data on how these credits are distributed across the UW's Areas of Knowledge (AoK). We also look at how these credits are distributed with respect to student demographics, and the correlation between earned incoming credits and time to degree overall and by major for the entering class of 2011 (see Appendix B). These data indicate that half of the earned college-level credits students bring to UW are in natural sciences, 28% in social sciences, and 22% in arts and humanities, with underrepresented students bringing less credit than majority peers. The time to degree data indicate a slight reduction in time to graduation, on average, for students who come to university with college credits, though less than a 1:1 correlation. These data show that the average incoming freshman brings approximately 20 earned credits with them, though a significant number of them bring more than 45 credits (equivalent to one year of full-time study) and some enter without having earned any college level credit. The result is that, on average, students take 4-5 fewer general education courses at the UW than we might have expected in the past.

Given that the state and K-12 system have invested in advanced learning opportunities that prepare high school students for college and provide students with the opportunity to earn college-level credit, and that even modest reductions in time to degree may be beneficial for families struggling with college costs, we recommend that UW focus less on students' prior earned credits, and more on what they gain from engaging in general education coursework at the UW. We would recommend:

- improving communication of our expectations for a high level of learning in UW courses,

- engaging new students immediately in the UW's community of scholars (Recommendation 3, above),
- articulating expected learning outcomes from UW's general education requirements, and
- investing in continuous improvement and innovation in lower division coursework.

As UW develops a response to this challenge, we need to keep in mind that these credits are distributed unequally among our students, and that addressing unequal access to college preparation for first-generation, lower income students and those from underrepresented groups remains an important focus of our work. In addition, there is currently no cap on the number of AP credits a student may bring to university, but credits resulting from IB and Cambridge exams are capped at 45. The UW might consider bringing all of these types of college credit awarded by examination into closer parity by capping all of the credits at 45, as is the practice at other Washington state institutions.

Recommendation 4. Create communications focused on what students gain from university courses and programs. Emphasize high standards of teaching and learning, the community of scholars, leading edge content, and the discovery mindset that infuse the UW's educational enterprise (Tied to Recommendations 3 and 5).

The UW's vast research enterprise and world-class research faculty are a major educational value reservoir that has taken decades, and billions of dollars, to build. The UW's portfolio runs the gamut from cutting-edge basic science to deeply community-engaged research. Faculty have high expectations for student learning in their courses and bring the passion they have for their subject area to their teaching. Much of the public-facing "news" about the student experience is focused on large, impersonal classes and majors that are difficult to access. We believe that changing this narrative would help prospective students understand the benefits of UW coursework. For example, Berkeley sends a clear message to its new and prospective students that they will learn something new in their Berkeley courses, regardless of what they have seen before arriving. Fully exploiting the depth and quality of the research enterprise in the classroom gives the UW a comparative educational advantage that few universities could match. This type of messaging should be strengthened in UW's communications with prospective students and families.

By the same token, the current state and Federal funding situation threatens this crown jewel, especially at a time when we expect retirement-based turnover in the faculty of up to 50% in the coming decade. This risks a decline in UW's educational quality, making it extremely difficult for UW to compete in the higher education marketplace and sustain its core public mission. Our communications with stakeholders should reflect this reality.

Recommendation 5. Review and consider revising UW's general education requirements, including developing expected learning goals, recommended pedagogical approaches and strategies, and communications about benefits and outcomes for students. At a minimum, develop better definitions of UW's Areas of Knowledge (AoK) courses and identify student learning goals and outcomes expected from satisfying these requirements.

A comprehensive review of UW's general education requirements, including developing learning outcomes and defining pathways through general education that students could use to prepare for their majors and gain useful skills and knowledge would be a major effort. This necessitates involving faculty across all three campuses and keeping in mind the university's commitment to transfer students from WA two-year colleges. An effort on this scale deserves its own careful study. While we did not examine all that this would entail, we note that it has been several

decades since the UW last revised its general education requirements and structure, and the lack of attention to this area of student learning is partly to blame for our current inability to adequately communicate to prospective students the value of their lower division coursework and experiences, beyond preparing for a major.

Many students currently consider their general education (or AoK) requirements as a box-checking exercise, and they may not appreciate the difference between taking an AP or IB course in high school for which they can earn college credit by passing a standardized exam, and earning that credit through a UW course. The UW has not engaged students in making meaning out of their learning resulting from these courses. Instead, students see brief, general definitions of the knowledge areas and the number of credits required in each one as a checklist. Though some students in our focus groups said they learned a lot and appreciated their general education coursework, others complained that the courses were either not engaging, too competitive because they were intended for applicants to a capacity constrained major, or not relevant to their interests. Several said they wished they had taken more AP courses in high school in order to avoid these courses, while others complained that AP coursework they took did not translate into meaningful course credits. If we maintain the current system of general education, AoK requirements need an overhaul that enables the university to articulate what students gain from these courses and to identify pathways through the AoK (Recommendation 1) that help students build meaningful skills and knowledge in areas that matter to them. This will also help improve communications with prospective students, families, and the K-12 community.

Part C: Preparing students to pursue, document, and communicate their skills and competencies to potential employers

The third part of our charge asked that we propose ways by which the UW can more effectively assist students in pursuing, documenting, and communicating to potential employers the co-curricular activities, skills, and other competencies they have acquired through their Husky Experience. In this work we considered the following questions:

1. What survey work exists regarding the needs of employers regarding student background? What are employers interested in, and in what ways would they like information presented regarding student achievement, broadly defined.

2. What services or programs are currently available to students to help them in communicating the value of their experiences to employers? Are there services that we should be offering, and if so why?

3. Some effort has been made to help faculty articulate skills and abilities acquired through curricular work. What has been the impact of this work to date? What opportunities exist in this area that could help students understand and describe the entirety of their learning experience, at both the course and degree level?

Among other things, our data and surveys show that employers, students, and families continue to demand STEM degrees, but employers express a strong desire for learning beyond bare technical skills. There is a strong expressed need for what are termed "soft skills" in recent employer surveys and reports. Students also need support in articulating their learning in terms that are meaningful to employers, and internship experience continues to be a driving factor in employment. The current generation of students is more focused on gaining employment after college than previous generations,

though they also show a concern for bringing their learning to bear on complex societal issues. Students in liberal arts majors seek complementary analytical skills relevant to the job market they will enter. The recommendations below address some of these issues; we also list ideas that arose from our workgroup's efforts and go beyond our stated charge in the subgroup C notes, which follow.

Recommendation 6. Assist students in effective career exploration and planning, and improve students' ability to articulate and document their skills and abilities by leveraging existing and emerging resources, such as tools for alternative credentialing.

The University of Washington is not in a position to scale specialized programming at this time. Therefore, the recommendation is to look for methods to reasonably engage the entire UW community by leveraging resources that are generally available.

Students entering the UW have already formed ideas about their longer term career goals and pathways, and our current practice is to assume that they "start over" in college. Though many will find that their interests and goals change significantly, it could be beneficial to create a more coherent structure that is aligned with the tools the K-12 system has developed to prepare students for college (as well as the Guided Pathways work currently underway at the state's 2-year colleges).

UW should look for ways to incorporate tools such as the WA High School and Beyond Plan into the enrollment application, not as a factor in admissions, but rather as a supplemental document that is connected to the student record and accessible to advisers, staff and faculty. The plan could be used as a launching point of conversation with first year students and a bridge between high school and university. This would facilitate an advising conversation about maximizing students' undergraduate education for WA residents; a tool could be developed for non-resident students as a supplement to their application, serving a similar advising purpose.

The Education Design Lab is involved in exploring the value proposition for both students and employers in identifying 21st Century skills and utilizing badging as a means of documenting and communicating skills. Over the past three years, the Lab has engaged a wide range of school administrators and faculty, students, and employers in the co-design of meaningful 21st century skill badges that may inform the way learners recognize and activate their skills. We recommend the UW track this and related work as it develops, and assess the opportunity to engage in an alternative credentialing process that would support students' articulation of experiences and skills to employers.

Recommendation 7. Increase student participation in internships and other applied learning experiences.

Internships or applied learning experiences such as undergraduate research or community engagement are instrumental in supporting students to develop a better understanding of their skill set and achieve better employment outcomes. In 2018, an analysis of the UW Destination Survey indicated that graduates who completed one internship were 61% more likely to be employed than those who did not participate in an internship, while graduates who completed 2 or more internships were 74% more likely to be employed than those without internship experience. A national survey of employers revealed that internship experience was the deciding factor between two otherwise equally qualified candidates. UW has recently expanded its offerings of sponsored internships on campus and in the local community; many industry partners also offer internships to UW students. The Career Center recently changed its name to reflect an

increased focus on internships, becoming the Career & Internship Center. However, the rate of participation is still fairly low outside of professional fields; students in all majors would benefit from greater access to applied learning experiences.

With the majority of liberal arts graduates now receiving degrees in majors that do not line up with a specific career, high demand or otherwise, skills have become a crucial factor in demonstrating job-market readiness. Schools must offer more opportunities for students to build in-demand skills through strategic curriculum development, the development of work-based learning opportunities such as internships or co-ops, and stronger ties with local employers. This is a particularly difficult challenge for colleges and universities that have tended to structure themselves around departments focused on traditional or broad-based skills. Our analysis reveals that four general career clusters—IT, business and communications, design, and analysis—present the fastest-growing opportunities for liberal arts graduates. Occupations in each of these fields depend on cross cutting, hybrid skill sets. Liberal arts students can improve their employment prospects by developing a versatile portfolio of identifiable skills that will give them an advantage in competing for an increasing number of hybrid roles requiring skills from disparate functional domains. In sum:

- These hybrid skills can complement those that constitute the foundation of a good liberal arts education.
- Colleges and departments must rise to the challenge by designing additional coursework, such as minors and short-term training programs, or experiential learning opportunities, such as internships and co-ops.
- With the help of their colleges, liberal arts students should know that there are large payoffs for adding high-demand skills that can fit with their major. Not everyone needs to become an engineering or math graduate to find a good career with strong wages. The right skills (e.g., digital design) added to the right major (e.g., fine art) can lead to a good job with a good future.
- A liberal arts education is not dead, nor is it necessarily a dead end. Rather a good liberal arts education must provide students with a strong set of foundational analytic and communications skills. But students need to consider how to add identifiable practical or technical skills to that foundation to make family-sustaining wages and to advance to high-paying job opportunities, and colleges need to ensure they do all they can to get students there.

We hear students expressing uncertainty and questioning what to study in college, and what to do after college. A part of this expression comes with being a young adult, but the accelerated pace of life and the demands of the workplace put pressures on young adults that can be alleviated, in part, with good guidance, participation in internships and research as well as developing concrete skills that will support their success in life after University.

Part A: Subgroup Notes

A. Identify opportunities for academic units to offer curricula and degree programs that are attractive to prospective and current students. Work in this area include evaluating the potential of:

1.Cross-disciplinary curricular programming.

Note that though we do not have systematic data indicating student demand for cross-disciplinary programming, however, we do have anecdotal information from the student focus groups and advisers that UW students would like opportunities to have transcriptable designations (badges, certificates, etc.) that would indicate competency in a particular area.

- o Examples that have been frequently raised include global, language and leadership competencies

We asked for data on interdisciplinary majors and minors and the options for students remain limited. There are several examples of successful programs (Data Science, UW honors) but there could be more interdisciplinary options for students.

Barriers to developing interdisciplinary programs most mentioned include the UW's budget model and the difficulty of developing programs that are truly across the university rather than within a School of College or between 2 colleges.

One cross-disciplinary program we studied was the leadership minor at the University of Minnesota. With the tag line, "major in anything, minor in leadership," this large minor at Minnesota may be good example for UW's ongoing work on a leadership minor.

Other UW program examples include:

- **UW Honors Program**: Students have three options: an interdisciplinary education track, an in-depth program within their majors, or a combination of the two. Students who complete all of the requirements for the interdisciplinary track will receive an "interdisciplinary Honors" designation on their diplomas. The other tracks appear as College Honors and Honors in [major], respectively. Director: Victoria Lawson, Assoc. Director Julie Villegas
- **UW E-science Institute**: Cross disciplinary program that organizes courses along the data science theme. Students who are taking the data science Option within their major take a series of courses that are offered in I-School, Statistics, CSE, Sociology, Applied Math and HCDE. This is an example of a cross-disciplinary approach that organizes and coordinates courses across schools & departments. eScience Institute is interested in developing a certification that could be extended to all students, regardless of whether their major has adopted the Option in Data Science, upon fulfillment of the courses mentioned above. Executive Directors: Micaela Parker & Sarah Stone. Directors: Magdalena Balazinska, Ed Lazowska, Rob Fatland, David Beck and Jake VanderPlas
- **UW Online Bachelor of Arts in Integrated Social Sciences**: Online program designed as a bachelor's completion program. Student engagement in the program has grown since inception, though as an online fee-based program, it is not representative of campus-based offerings. Could it be adaptable to on-campus learning? Co-Directors: Deborah Porter debzport@uw.edu and Mel Wensel wensel@uw.edu.

Most of the UW examples are limited to a small group of students (Honors) or to particular majors. There is room at UW to expand these types of options either to have more options (e.g. leadership minor) or to have it available across more disciplines.

2. Undergraduate programming aligned with graduate or professional degree programs.

We asked for data on 4+1 or concurrent master's opportunities for students at UW. The institution does not have systematic data on such offerings or a single place where students or others could go to get this information.

UW has only 2 Combined BS/MS programs, one of which is offered by the School of Computer Science & Engineering; the other is in the College of Engineering, department of Electrical & Computer Engineering.

The CSE program is:

- Available only for UW CS/CSE majors is a 5th year master's degree that students apply for in their Junior year.
- Tuition based program with 50-60 students per year.
- Students can, and regularly do, receive TA & RA positions.
- The program is intended to provide students who need a 5th year to gain additional research and academic experiences. Most students will transition into industry positions after graduating, however a few students apply for PhD programs.
- Crystal Eney, Program Director and Zachary Tatlock, Faculty Advisor

UW offers 264 Masters degrees and a number are 1-year masters programs, however there isn't centralized information or an undergraduate culture that focuses on these programs. Applications to these programs follow traditional graduate application policies.

We also looked at Stanford's "co-terminal" bachelor/master's program where students in their last two years can apply for a master's program while they are still undergraduates. Students who are accepted into the program can begin to take their graduate courses as they have room in their schedule. The "co-terminal" nature of the program allows students to use their financial aid to help support both degrees if needed, and the tuition schedule is set according to student status. There are many opportunities for students across majors and disciplines and the level of participation has grown from 10% of students to 30% within the last few years, since Stanford moved the program coordination to their office of undergraduate education and raised visibility and student advising related to the program offerings. Many of the participants are in technical fields, but a significant number of students in liberal arts undergraduate majors enroll in an applied master's as a complement to their undergraduate degree.

Because UW is a public university, the "co-terminal" aspect doesn't make sense for our institution, since that could represent a decrease in tuition or fee revenue from these degree programs. However, the early application, seamless nature of the student experience, and the attention departments give to the development of professional skills and learning that enhances an undergraduate degree are appealing, and we think could work well at the UW. Note that some advisers and career services staff cautioned that the current professional master's programs at the UW often suffer from lack of adequate student services. Should this recommendation be followed, we recommend developing services at both university and department level adequate to support student needs.

Draft Recommendation:

Develop a website and portal for 3rd and 4th year students who are interested in 1 year master's that would centralize available opportunities into a single location.

Encourage departments to develop 1 year (fee-based, or tuition-based, depending on the unit) master's program. This may help to solve some budgetary challenges, provide meaningful graduate education for students and allow them to complete such education more efficiently. A caveat to keep in mind is that fee-based programs may provide a financial barrier for Pell-eligible students.

Co-terminal or combined M(A)S/B(A)S masters programs modeled after CSE that provide a 5th year experience for students interested in gaining additional coursework and research experience could be combined with co-curricular certificate programs and provide a source of TA's for undergraduate courses.

3. Combined curricular and co-curricular undergraduate programming that lead to both degree and skill attainment (for example, a degree + undergraduate certificate)

Aside from the Foster Certificate in International Studies in Business, we did not identify other certificate opportunities for undergraduates at the UW. Based on the focus groups and anecdotal information from a small number of advisers, this is an area that is likely of great interest to students to have more designations (certificates, alternative credentials) that could be on student transcripts.

Our research identified number examples at other institutions:

Certificate in Entrepreneurship & Technology: UC Berkeley Sutardja Center for Entrepreneurship & Technology within the Berkeley School of Engineering. Students who complete the series of courses apply for a certificate, which is then mailed to them. Open to any major. 5 course units plus a special lecture series (1 unit) as well as participation in one of the Innovation/ Startup programs for undergraduates.

International Plan at Georgia Tech

https://oie.gatech.edu/ip_welcome

Background: Georgia Tech is a public university offering mostly STEM, business, and design degrees, with a handful of liberal arts/interdisciplinary degrees (e.g., Global Economics and Modern Languages; History, Technology, and Society). It is consistently ranked among top public universities for undergraduate and graduate programs and university-led innovation. Total enrollment in fall, 2017 was 29,369 students, among them 13,797 graduate students.

From the International Plan program website:

The International Plan is a four-year undergraduate academic program aimed at developing the global competence of students within the context of their majors. Currently integrated into 27 of Georgia Tech's [36] undergraduate majors, the program requires students to engage in a minimum of twenty-six weeks of international experience (work, research, or study), to develop proficiency in a language other than English, and to take internationally-oriented coursework. Degree requirements are not modified but are satisfied with specialized courses and appropriate choices of elective courses.

Students who are pursuing majors that participate in the program may apply to the program as freshmen or sophomores. Each International Plan major has international studies, language acquisition, and overseas experience integrated into the traditional BS degree in a way that is discipline-specific. To earn a designator on their diploma and transcript, IP students must

- Develop proficiency in a language other than English
- Complete a minimum of 26 weeks of coherent international experience;
- Complete three globally-oriented courses, plus a capstone in the major;
- Maintain a cumulative GAP of 2.7 overall.

IP web resources include useful information for students on the value of participation for learning about the global context of their major, the value of the experience abroad for personal growth, career development, and skill acquisition. Resources are also available that support faculty and staff in participating departments. Students submit paperwork to enroll in the program and to request the receipt of the designation once they have met the requirements.

Outcomes

27 majors span STEM, business, liberal arts fields. From looking at university reports, it looks like 30 total students earned the IP designation in 2016-17; 208 new students joined the program the same year; 253 have graduated with the designation since program inception about ten years ago.

Director: Jennifer Evanuik Baird, 404-894-7475; jennifer.baird@oie.gatech.edu

Per interview with the director, 250 freshmen sign up for IP annually, which has doubled enrollments in intermediate foreign language and culture courses. Many students decide later not to finish the plan, given the extended period abroad is longer than most programs. However, many do develop the "Foreign language proficiency" degree designation, though they do not receive the IP. Both of these possibilities for formal documentation of skills are attractive to students who will seek employment at multi-national companies.

Georgia Tech, University of Maryland, Florida Atlantic University, University of North Carolina Chapel Hill, and others: Research proficiency transcript designation for students who complete coursework in research methods and complete a substantial (variously defined) research project and presentation/publication.

Draft recommendation:

This is a space in which UW only has one offering and is something the UW should consider to meet student interests and strengthen documentation of students' skills on their transcripts. Potential designations could include even broader data science offering across majors (noting the Data Science Option is a great example of this kind of effort), global competencies, research and language proficiencies, and others. Any area that provides content and skills that could complement multiple degree programs could be developed.

Introducing students to the university as a community of scholars

Several institutions have developed programs that engage students immediately in the research enterprise of the university, offering these experiences to approximately 1,000 freshmen annually as part of their general education. Both institutional commitment and external funding have been key to the development of these programs. Two examples are highlighted below.

The First-Year Innovation & Research Experience at University of Maryland

www.fire.umd.edu

FIRE provides students authentic research experience, broad mentorship and degree credit that impact academic success, personal development, a sense of community and professional opportunity. The mission of the program is to welcome students to the authentic research mission of the University through deep immersion and mentorship in faculty-led research groups. Students become active members of FIRE research streams that derive from a broad spectrum of disciplines. FIRE is a 3 semester experience in which students earn General Education credits. Currently, 17 stream topics are offered. Each stream has an industry or community partner.

Freshman Research Initiative at University of Texas at Austin

https://Cns.utexas.edu/fri

The Freshman Research Initiative (FRI) offered by the College of Natural Sciences at UW Austin is the nation's largest freshman research program at a single institution, where first-year students experience the excitement of scientific discovery firsthand. Participants do real-world research, use cutting-lab equipment, develop technological innovations, and publish papers in peer-reviewed science journals. The end result is students who are better prepared for the future and more likely to excel in the sciences, math and technology. Each year, approximately 900 freshmen in the College of Natural Sciences participate in 29 different research streams lead by faculty and graduate students.

See also notes in the next section on cross-disciplinary, themed first year courses.

Part B: Subgroup Notes

B. **Propose strategies by which the UW can adapt general education course offerings to address the needs of students entering the UW with nearly 200,000-quarter credits in 100 and 200- level courses already completed.** Work in this area includes:

1. *A review of current communication practices regarding credits obtained through AP, IB, Cambridge, Running Start, and UW in the High School and recommended use of those credits to prospective students.*

We requested data on the incoming credit distribution for first-time first-year (FTFY) Freshmen in Fall of 2011 and Fall of 2017. While 39% of students arrived in 2011 without any incoming credits, that number had dropped to 26% in 2017. In both years, around half of students brought in a total of 1 to 45 credits. In 2017, 16% of FTFY Freshmen brought in 45 to 90 credits in 2017, as compared to 9% in 2011. Looking at students from 2011, those who brought in the most credit (more than 90) tended to complete their degrees roughly a year early, although this varied by field of study. In general, for a given quantity of incoming credit, students bringing in AP credit tended to stay longer at the UW than students bringing in transfer credit; this is especially pronounced students bringing in 46 to 90 credits, where students bringing in transfer credit graduated in 12.91 quarters, on average, while students bringing in an equivalent amount of AP credit graduated in 14.5 quarters, on average. We are unsure of the precise reason for this, beyond conjecturing that students bringing in large amounts of AP credit (as compared to transfer credit) may be more likely to treat AP credits as preparation for further studies than a means to reduce to time at the university. On average, students who bring in some credit realize a modest decrease in time to degree, which varies by major and the amount of prior earned credit. (Excel spreadsheets with the data are attached to the report.)

Since two points always make a line, we are uncomfortable drawing strong inferences from the data, but they appear to show that students are bringing in more credit than before, and this may have an effect on time to degree. Given this situation, how has the UW been communicating with students about the value and meaning of these credits?

The UW Office of Admissions serves as the official policy voice for credits earned prior to matriculation, and it is clear with its messaging: We support engagement in such programs as they, first and foremost, "provide excellent preparation for university study," cf:

- https://admit.washington.edu/apply/transfer/exams-for-credit/ib/ (statement on IB)
- https://admit.washington.edu/apply/running-start/ (statement on Running Start)
- https://admit.washington.edu/apply/transfer/exams-for-credit/ap/ (statement on AP)

Each of these informational web pages provides guidance on how to determine course equivalency, course placement, and course credit earned, if any. They are consistent in their communications regarding academic planning, particularly with regard to timing. As noted on the Running Start

informational page, the UW encourages "academic planning as early as possible to ensure that they make the most of their college credit."

Communications with students through the UW's orientation and advising programs and services are anchored in the Office of Admissions policy statements and curricular guides. Messaging generated by staff in First Year Programs, Undergraduate Advising, etc., points students to the Office of Admissions for information, and for help with interpretation they encourage students to think of credits and course placements earned as a permission structure, not a prescription for academic planning. For example, orientation leaders and advisers are trained to encourage students to think about enrollment in MATH 125 not necessarily being a foregone conclusion of having been placed into MATH 125 (2nd quarter calculus). They show students how to access former exams from MATH 124, for example, and to engage in a self-assessment for MATH 125 readiness based on that as a complement to the placement -- and to consider enrolling in 124 if they do not feel prepared for 125 given that self-assessment.

Less frequent in the admissions, orientation, and advising experiences of students are policy statements and conversations about the implications of having earned credit for courses that do not necessarily fall in lines of common prerequisite course-taking (e.g., MATH, CHEM). For example, courses in the humanities and social sciences that count toward VLPA and I&S requirements, respectively, are increasingly brought in by students, and little is said about what those credits count for toward the educational experience beyond counting toward the requirement.

2. *Defining the "value added" of our current general education courses over "dual credit" pre-matriculation course offerings.*

There are several sources of value added by our general education courses. First, there is the vast research enterprise at the UW, which brings in roughly $1 billion per year. The UW is recognized nationally and internationally as a research powerhouse. This spills over into the classroom, where, for example, we have MacArthur Fellows teaching introductory biology and Packard Fellows teaching calculus. Our faculty is also full of Sloan Fellows, NSF CAREER and PECASE awardees, etc., who are devoted undergraduate (and graduate) teachers. One of our contacts at Berkeley told us that they see clear increases in participation when their tenured faculty teach introductory courses. We do not have extensive data to support this claim at UW, but we do know that the revision of the UW calculus program in the early 2000s led to increased faculty participation and increased student satisfaction.

Second, the UW is deeply engaged in the community. The decision to host Tent City 3 created tremendous educational opportunities. At least eight courses, the Honors Program, the School of Public Health, the School of Dentistry, and other units on campus interacted with TC3 during the stay. We have researchers studying the Washington agricultural industry mentoring first-generation students who go on to win Gates Foundation Millennium Scholarships. We have a professor whose work played a key role in the recent Washington Supreme Court decision declaring the death penalty unconstitutional. These are just a few examples of the outward-facing scholarship and impact of the UW. The educational value of these activities is hard to capture in an online course or a content-focused exam prepared by a testing company.

Third, the UW has a resident community of scholars. Students coming to campus are likely to encounter a more diverse group of peers, with a more diverse range of talents, backgrounds, and interests, than

they have encountered before their arrival at UW. Students can attend the office hours of a world-class faculty scholar who can explain how she thinks, not just what the textbook says.

3. *Define strategies for strengthening the "value added" by general education courses.*

We believe that the educational experience of all undergraduates would be stronger if the general education program were given serious reconsideration and, at minimum, nested in a clear articulation of goals for student learning. We considered several programs as potential models for changes we could make to strengthen our general education curriculum.

We see several examples of general education curricula at other institution that may be of interest, as well as several programs at other universities that could serve as way stations on a longer transformative journey or components of a larger reform.

The "New College Curriculum" at the University of Virginia (UVA)

- http://gened.as.virginia.edu/

Though limited to the College and Graduate School of Arts & Sciences at UVA, and though UVA is about half the size of the UW (Seattle), UVA is an Association of American Universities (AAU) peer. Moreover, their revised general education program is representative of what we consider to be positive trends in the development of general education programs and research universities. To illustrate:

- UVA's New College Curriculum brings a focus to the first year of study with its implementation of "Engagements" courses with "College Fellows":

    - Each student takes four courses in their first year that expose them to "distinct ways of apprehending the world" and "particular types of questions" in the context of a leading research university (i.e., leveraging the context of the research university rather than an attempt to build a liberal arts college within the research university setting): "Engaging Aesthetics," "Empirical and Scientific Engagement," "Engaging Differences," and "Ethical Engagements."

    - These new courses are taught by faculty who "are among the University's best scholar-teachers" and "step away from their disciplinary teaching for a period of two years."

        The UW has well-established programs that bring the first year experience into focus (e.g., FIGs, Collegium Seminars, Early Fall Start) but would benefit from a re-envisioning and alignment of courses and applied experiences to achieve general education student outcomes. We do, however, have a talented teaching faculty base to draw from -- faculty who have been involved in these first year programs for years and others who have variously been involved in efforts through the Center for Teaching & Learning. We believe a program such as this is imminently pilot-able and ultimately scalable.

- Another feature of UVA's New College Curriculum is their "Forums" curriculum. This is another first year student engagement strategy that complements and deepens their "Engagements" curriculum by inviting students to study a particular topic or theme (e.g., "Humans, Nature, and Evolution," "Religion, Politics, and Conflict") throughout the first year in a learning community/coordinated studies format. This curricular model is similar to the "Big Ideas" project at Berkeley (https://bigideas.berkeley.edu/) and the First Year Clusters initiative at UCLA (http://www.uei.ucla.edu/academic-programs/ucla-cluster-program/freshman-clusters/) yet distinct because it is integrated in the general education reform. These latter programs have much we can draw from, but UVA's initiative is even more instructive with regard to embedding reforms that strengthen distinctiveness by connecting them to general education. In short, one-off or "boutique" programs are relatively straightforward to implement. While they can be transformational experiences for individual students, they don't necessarily transform the institution like a general education reform project does.

- In addition to a first year experience that is re-framed, UVA's New College Curriculum requires students to develop particular "Literacies" ("Rhetoric for the 21st Century," "World Languages," and "Quantification, Computation, and Data Analysis") and take one course in each of its seven articulated "Disciplines" ("Artistic, Interpretive, and Philosophical Inquiry," "The Chemical, Mathematical, & Physical Universe," "Cultures & Societies of the World," "Historical Perspectives," "Living Systems," "Science & Society," and "Social & Economic Systems"). We can see here a general education curricular "transformation" that is common among peer institutions who have engaged in such endeavors, namely, meaningful re-packaging, re-naming, and re-deployment of existing curricula. We can readily imagine here courses that satisfy the Quantitative/Symbolic Reasoning (Q/SR), Diversity (DIV), Visual, Literary, & Performing Arts (VLPA), and so forth being repurposed to fit a different general education schema. What would be critical, however, and what it is apparent that UVA did well, is deeply engaging faculty in the process such that faculty know what general education requirement their course meets, what its learning goals are, and how it connects to the broader curriculum. These are not claims we can currently make about general education courses at the UW.

UCLA's "Freshman Clusters" Program

http://www.uei.ucla.edu/academic-programs/ucla-cluster-program/freshman-clusters/

Since the early 2000s (2003) UCLA has offered an optional year-long learning community/coordinated study curriculum to first year students. Essentially, this curriculum combines multiple courses into one and is team-taught by faculty representing multiple disciplines. For example, the "Food: A Lens for Environment and Sustainability" cluster is taught by faculty from UCLA's Institute of the Environment and Sustainability, Civil and Environmental Engineering, and English. Four general education requirements are typically satisfied in each cluster, including a writing requirement. (This connects writing to disciplinary/interdisciplinary context, much like UW's Interdisciplinary Writing Program (IWP)).

Nine clusters are offered for 2018-19. The UW is well poised to launch this type of initiative as it would be a higher touch version of First-year Interest Groups (FIGs) which are currently offered at the UW for Autumn quarter only. Encouraging team-teaching efforts among the faculty might require the clarification of incentives and disincentives inherent in our current budget model. What we know from FIGs for over 30 years is a strong understanding of student pathways – what combinations of courses work in the first quarter, what students end up taking in subsequent quarters independent of FIGs, etc.

Minnesota's "Grand Challenge Curriculum"

http://gcc.umn.edu/

Minnesota's program can almost be discussed in the same breath as UCLA's Clusters program insofar as they're sets of courses offered on an especially timely (e.g., "Science and Society: Working Together to Avoid the Antibiotic Resistance Apocalypse") or enduring (e.g., "What is Human Agency?: Scientific and Philosophical Perspectives") topic and taught by a team of faculty representing multiple fields/disciplines. What distinguishes UMN's program from UCLA's is that Grand Challenge courses are one-off courses, i.e., standalone courses offered each Fall and Spring semester (not across both semesters). Each Grand Challenge course counts toward a general education requirement just like at UCLA. UMN's program is newer, established in 2015. Fewer than ten courses are offered each semester. This program is not unlike Berkeley's "Big Ideas" courses.

"University Seminars" at George Washington University

https://provost.gwu.edu/university-seminars

GW's University Seminars program follows a very different model, one that may be interesting for a university like UW that is committed to engagement with the broader community. "The goal of the Seminars is to connect the traditional research and inquiry activities of the academy with the major institutions of society, thereby ensuring an exchange of perspectives and information. University Seminars meet periodically during the academic year on the GW campus. The initial nucleus of each Seminar is a group of highly qualified faculty from a range of appropriate departments and schools, along with distinguished individuals from outside the GW academic community." Each Seminar has a chair/convener. Courses spin off and around the Seminars but aren't required. Examples: "mHealth" (mobile apps in health care), "Forecasting" (forecasting in fields like econ, statistics, public policy, geography, demography…).

Ohio University "Academic Innovation Accelerator"

https://www.ohio.edu/instructional-innovation/initiatives/academic-accelerator.html

"The Academic Innovation Accelerator (AIA) empowers faculty to pursue appropriately designed and evaluated pilot projects in academic innovation that enhance both the quality and reach of an Ohio University education." AIA essentially functions as a within-institution grant-maker. Faculty can submit proposals – 500-words only, just to start the conversation, sometimes aligned with the annual "ideation" event, so low barrier to participation – to receive funds in support of curricular and co-curricular innovation projects. Examples of funded/successful proposals include an effort to advance "place-based pedagogy," an initiative focused on "digital humanities," etc. They're working with institutional dollars – just over $900k.

Engaged Cornell

https://engaged.cornell.edu/

Engaged Cornell is an initiative that started much like AIA at Ohio University but grew exponentially through a massive fundraising effort. Launched with a $50M gift, Engaged Cornell seeks to advance "engaged learning," broadly conceived. Grants and awards are available to faculty, staff, and students, with an emphasis on curricular transformation at the level of the major. Substantively, then, the focus isn't on general education, but an initiative of this sort is important to make note of as, potentially, a long-term effort that may be undertaken to support innovation in the curriculum with the support of private philanthropy.

Part C: Subgroup Notes

Group C Charge: Propose ways by which the UW can more effectively assist students in pursuing, documenting, and communicating to potential employers the co-curricular activities, skills, & other competencies they have acquired through their Husky Experience

Question 1: What survey work exists regarding the needs of employers regarding student background? What are employers interested in, and in what ways would they like information presented regarding student achievement, broadly defined.

The National Association of Colleges and Employers (NACE) has identified career readiness as "The attainment and demonstration of requisite competencies that broadly prepare college graduates for a successful transition into the workplace." These eight competencies associated with career readiness were identified in the most recent NACE 2018 Job Outlook Survey (file available upon request):

1. Critical thinking/problem solving
2. Oral/written communication
3. Teamwork/collaboration
4. Digital technology
5. Leadership
6. Professionalism/work ethic
7. Career management
8. Global/intercultural fluency

They also identified what they labeled "E-Learning Soft Skills", and they are:

- Communication
  - Humility
  - Communication styles and techniques
  - Managing conflict
- Critical Thinking
  - Ethical Character
  - Personal Judgment
  - Problem Solving
  - Time Management
- Collaboration
  - Diversity and Inclusion
  - Self-Confidence
  - Teamwork
- Creativity
  - Positive Attitude
  - Initiative
  - Flexibility
  - Work Ethic

The NACE survey also examined employers' hiring expectations by major. At the top of the list is engineering, with 72.1% of respondents looking for graduates in that field. Unsurprisingly, business (68.2%) and computer sciences (57.8%) are also successful majors in the job market. At the bottom of the list ranks health sciences, education and agriculture. Only 11% of employers were interested in hiring humanities majors, and 10% for the social sciences.

A previous study by the Association for American Colleges & University identified **the "Top Ten Things Employers Look for in New College Graduates"** and they are the following.

1.   The ability to work well in teams—especially with people different from yourself
2.   An understanding of science and technology and how these subjects are used in real-world settings
3.   The ability to write and speak well
4.   The ability to think clearly about complex problems
5.   The ability to analyze a problem to develop workable solutions
6.   An understanding of global context in which work is now done
7.   The ability to be creative and innovative in solving problems
8.   The ability to apply knowledge and skills in new settings
9.   The ability to understand numbers and statistics
10.   A strong sense of ethics and integrity

What are employers interested in, and in what ways would they like information presented regarding student achievement, broadly defined?

 We worked locally with the Washington Roundtable to do some informal "qualitative" interviewing of members of the WRT, and here is the summary of what we heard from them.

When asked, *"What are employers looking for in recent college graduates? What skills, abilities, or traits do you hope they come prepared with when they join your organization?"*

- Employers (as a whole) do not emphasize "technical job skills" (e.g., what they know how to do that relates specifically to the business/organization). Beyond some fundamentals of the job classification, most job specific skills will be handled by the training they get once on the job (especially for brand new people right out of college).
- What employers are far more interested in now are "soft skills", or what are being referred to as "employability skills".
- Soft or employability skills include
    - the ability to engage positively and productively with a diverse cross section of other employees
    - the ability to manage time and projects successfully
    - the ability to communicate in both writing and verbally across a number of different contexts and to diverse audiences
    - the ability to both receive and give constructive feedback (listening skills)
    - the ability to serve as both a leader and a follower within the organization equally well

- Leadership was also something that came up. Employers felt as though students were coming out of college with a very narrow view of what "leadership" within a business or organizational

context is, and with little to no practical (useful) experience leading. In particular, they shared that within organizations these days, things move rather quickly, and people need to be nimble and prepared to be working with multiple teams of people – sometimes as the lead, sometimes as a "worker bee" – and that this requires different skill sets and different approaches to be successful.

- The bottom line: most recent graduates who begin new careers do not struggle because they have a limited technical proficiency, it is because 1) they have a difficult time working with other personalities (co-workers and/or boss), 2) they cannot successfully manage their time or projects miss deadlines, or need excessive feedback to complete assignments, and/or 3) they lack a nimbleness, flexibility, creativity, or persistence when it comes to problem solving.

- Employers also mentioned that they were very encouraged by the OSPI's office adopting the 21st Century Learning Skills for CTE programs in our state (http://www.k12.wa.us/CareerTechEd/TwentyFirstCenturySkills.aspx). They thought these were very useful and could (should) be adopted in four-year institutions as well.

Question 2: What services or programs are currently available to students to help them in communicating the value of their experiences to employers? Are there services that we should be offering, and if so why?

We reviewed the services and program offered by Bates College, Wake Forest University and Northeastern University that are currently available to students to provide guidance in communicating the value of their university experience.

These institutions have established a multi-year, programmatic approach to engaging liberal arts majors in professionalization, including pre-professional graduate program preparation.

What is compelling about these programs is the student outcomes that have evolved from services and activities that are in many ways similar to current UW programming. Both Bates (1787 undergrads) and Wake Forest (4955 undergrads) are small liberal arts programs with robust staffing and resources, while Northeastern, the largest of the three, has an enrollment of 17,506 undergrads.

The University of Washington is not in a position to scale specialized programming. Therefore, the recommendation is to look for methods to reasonably engage the entire UW community.

High School and Beyond Plan

To graduate from high school in Washington, all students must develop a High School and Beyond Plan on how they will meet the high school graduation requirements and what they will do following high school. A student's plan, which starts in middle school and is revised as the student moves forward, includes the classes needed to prepare for a postsecondary pathway as well as interests around career.

The Required elements of the High School and Beyond Plan, at a minimum, are the following.

- Begins in 7th or 8th grade
- Identification of career goals based on a career interest and skills inventory or assessment,
- Identification of educational goals
- A four-year course plan that fulfills graduation requirements and aligns with career and educational goals

- A resume or activity log by the end of twelfth grade that provides a written compilation of student's education, any work experience, and any community service and how the school district has recognized the community service

Group C recommends that the UW look for ways to incorporate the High School and Beyond Plan as a part of the enrollment application, not as a gauge for admission, but rather as a supplemental document, that is on record and therefore accessible to advisers, staff and faculty. Position the plan as a launching point for conversation with first year students, and a bridge between high school and university. A further idea is to build upon this model encouraging students to update the plan as they progress through their university experience. Although this would only serve in-state UW freshmen, it would provide a vehicle to reach a large percentage of new students with a conversation about maximizing the benefit of their time at the UW. Advisers, faculty, and staff would need to learn how to utilize the tool, particularly for students who reside in the College of Arts & Sciences, where the link between major and career can be relatively weak.

Badging

The Education Design Lab is involved in exploring the value proposition for both students and employers in identifying 21st Century skills and utilizing badging as a means of documenting and communicating skills. Over the past three years, the Lab has engaged a wide range of school administrators and faculty, students, and employers in the co-design of meaningful 21st Century skill badges that may inform the way learners recognize and activate their skills. Group C recommends that the UW track this and related work as it develops and assess the opportunity for UW to engage in a badging process that would support student success and articulation of experiences and skills to employers.

Handshake

The Career & Internship Center has just launched the Handshake tool. Handshake is a talent-recruitment start-up for students that works a lot like LinkedIn, the professional networking site. Students can build profiles highlighting their academic accomplishments, skills and extracurricular activities, and then make those profiles visible to companies on Handshake that have connected with the University of Washington. The platform may expedite connections between students and employers.

Handshake is launching advanced online assessments for employers to find and select students for entry-level opportunities. Assessments are a top trend in today's early career recruiting world. Employers across many industries are embracing a variety of new platforms using technical or behavioral assessments. These tools can democratize opportunity, by allowing students to show their strengths and skills, through assessments that reduce bias. The pymetrics platform Handshake is collaborating with allows students and employers to discover matches based on students' unique traits and preferences.

This is another method for students to receive feedback on their strengths and skills.

Internships

Internships and apprenticeships stand out as the applied learning experiences most highly valued by employers: 93% of executives and 94% of hiring managers say that they would be more likely to hire a recent graduate who has held an internship or apprenticeship with a company or organization, including 52% of executives and significantly more hiring managers (60%) who would be much more likely to do so.

(Hart Research Associates)

Group C recognizes that internships or some sort of applied learning experience is instrumental in supporting students in developing their skills and prospects. More specifically, internship participation is correlated with better employment outcomes. In 2018, an analysis of the UW Destination Survey indicated that graduates who completed one internship were 61% more likely to be employed than those who did not participate in an internship, while graduates who completed two or more internships were 74% more likely to be employed than those who did not gain internship experience. Similar results were found regardless of whether one's position was career-related (part of, or a step towards, a career goal or plan) or not. Participating in one internship increased one's chances of being in a career-related position by 65% and participating in two or more increased one's chances by 79%. Additionally, recent graduates said the skills they gained from their internships were moderately important to very important to their current position (average was 3.4 on a 4-point scale).

A national survey of employers revealed that internship experience was the deciding factor between two otherwise equally qualified candidates. More specifically, on a scale of 1-5 where one indicated "no influence at all" and five indicated "extreme influence", the average influence rating for "has completed an internship with your organization" was 4.6.

Based on these findings as well as ample documentation on the value of internships, Group C recommends that the UW continue to find ways to encourage student participation in internships as well as other applied learning experiences.

Question 3: Some effort has been made to help faculty articulate skills and abilities acquired through curricular work. What has been the impact of this work to date? What opportunities exist in the area that could help students understand and describe the entirety of their learning experiences?

We are unaware of broad uptake of the available tools among the faculty. Students in applied/professional programs (business, engineering, computer science, informatics, etc.) actively engage in career and professional programs and opportunities at a much higher rate than students in the arts, humanities, social sciences, and natural sciences. This indicates that the integration of transferable skills is more easily understood by students in these areas: they see the degree as having an applied nature. Within the social sciences we have seen some success in areas like communications, economics, and the law, societies, and justice programs. It is unclear to what extent faculty are involved in this kind of skill articulation.

We have also not yet found good examples of the kinds of overall summary tools addressed in this question. Further study of this point may be merited. Nevertheless, several of the tools mentioned in the answer to the previous question could naturally lend themselves to this kind of summarization.

Many efforts have been made to integrate and highlight transferable skills and professional competencies into the classroom with varying degrees of success. Some trends and outcomes from initiatives to-date:

- Students in applied/professional programs (business, engineering, computer science, informatics, etc.) actively engage in career and professional programs and opportunities at a much higher rate than students in the arts, humanities, social sciences, and natural sciences

- The integration of transferable skills is more easily understood by students in these areas: they see the degree as having an applied nature; within the social sciences we have seen some success in areas like communications, economics, and the law, societies, and justice programs

- Through coordinated efforts, there has been explicit translation of academic experiences into professional skills through the degree/course lens of areas like dance, history, and French

Observations/Results:

- In areas of the liberal arts, each student has a unique and personal experience of their academics, yet we have attempted to make all of these experiences universal, and have failed, e.g. not all history majors are good writers; not all Spanish majors are bilingual, not all biology majors are researchers, etc.

- For faculty who have never held a job outside of academia, it is wholly unfair to the faculty and misleading to the students that every academic experience can be translated to a professional competency

- For professional opportunities where content/area knowledge is required, the linkage needs to be more direct

- For professional opportunities where there is not a direct link to content/area knowledge but a degree is required, the UW (and specifically the College of Arts & Sciences) needs to codify programming that explicitly trains students to be reflective of their own strengths in combination with their experiences to form pre-professional identities that are desired by organizations looking to hire recent college graduates; it is not enough to say "all UW students graduate with critical thinking skills that employers want" if said students are unable to describe in detail and within a professional work (not student) context what their exact skills are and how they honed them

- It is unfair to faculty to ask that they work individually with students around articulating the aforementioned experiences; moreover, not every student will need this work—they will be successful through other channels (networks/social capital, work experience, etc.)

- In the current "Husky Experience" students expect to receive academic credit for extra-curricular work that is not academic in nature; students need to be motivated by opportunity, not credit, in the area of work and professionalization; academic credit needs to be awarded for coursework and pedagogies designed by faculty; extra-curricular work should be undertaken by students who understand the opportunity and the value of it (the value is not credit) and they should undertake these opportunities with an intentionality that matches their holistic view of why they are educating themselves and pursuing a degree at UW

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Additional thoughts on part C of the charge

With the majority of liberal arts graduates now receiving degrees in majors that do not line up with a specific career, high demand or otherwise, skills have become a crucial factor in demonstrating job-market readiness. Schools must offer more opportunities for students to build in-demand skills through strategic curriculum development, the development of work-based learning opportunities such as internships or co-ops, and stronger ties with local employers. This is a particularly difficult challenge for colleges and universities that have tended to structure themselves around departments focused on traditional or broad-based skills. Our analysis reveals that four general career clusters—IT, business and communications, design, and analysis—present the fastest-growing opportunities for liberal arts graduates. Occupations in each of these fields depend on cross cutting, hybrid skill sets. Liberal arts students can improve their employment prospects by developing a versatile portfolio of identifiable skills that will give them an advantage in competing for an increasing number of hybrid roles requiring skills from disparate functional domains. In sum:

- These hybrid skills can complement those that constitute the foundation of a good liberal arts education.
- Colleges and departments must rise to the challenge by designing additional coursework, such as minors and short-term training programs, or experiential learning opportunities, such as internships and co-ops.
- With the help of their colleges, liberal arts students should know that there are large payoffs for adding high-demand skills that can fit with their muse. Not everyone needs to become an engineering or math graduate to find a good career with strong wages. The right skills (e.g., digital design) added to the right major (e.g., fine art) can lead to a good job with a good future.
- A liberal arts education is not dead, nor is it necessarily a dead end. Rather a good liberal arts education must provide students with a strong set of foundational analytic and communications skills. But students need to consider how to add identifiable practical or technical skills to that foundation to make family-sustaining wages and to advance to high-paying job opportunities, and colleges need to ensure they do all they can to get students there.

We all hear students expressing uncertainty and questioning what to study in college, and what to do after college. A part of this expression comes with being a young adult, but the accelerated pace of life and the demands of the workplace put pressures on young adults that can be alleviated, in part, with good guidance, participation in internships and research as well as developing concrete skills that will support their success in life after University.

Appendix A

References Consulted

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Appendix B

University of Washington Data

1. Questions
2. Description of data provided
3. Distribution of college-level credits earned in high school among Areas of Knowledge (AoK); 2012-17
4. College-level credits earned in high school for incoming freshmen in 2011 by type, demographics (Excel file, Attached: Copy of Incoming Credits Freshman Demographics)
5. Time to degree for incoming freshmen in 2011 by type of earned credit in high school and major (Excel file, Attached: Copy of Incoming Credits TTD)

Appendix B University of Washington Data

1. Questions

August 13, 2018

Data questions for UW institutional research

We are trying to understand the impact of students coming to UW with significant numbers of 100 and 200 college-level credits on UW's general education (Areas of Knowledge) course offerings.

1. How are credits (e.g., AP, IB, Running Start, etc.) that incoming freshmen have earned prior to enrolling at UW distributed across the incoming class?

2. How are credits (e.g., AP, IB, Running Start, etc.) that incoming freshmen have earned prior to enrolling at UW distributed across the Areas of Knowledge?

3. Compare 100- and 200-level course-taking patterns for first time freshmen students who come to UW with prior college-level credit vs. the 100- and 200-level course-taking patterns for those who do not come in with credit. [If we can analyze by Areas of Knowledge, is there a larger difference for some AoK?]

4. Does the # of credits students earn from prior sources correlate to time to degree? [Is this correlation different for different CIP codes?]

5. What is the correlation of #credits incoming freshmen have earned prior to enrolling at UW and excess credits at graduation? [can we analyze by CIP?]

Appendix B University of Washington Data

2. Description of data provided

We received information from the Office of the Registrar (Question 2) and Institutional Research that addressed questions 1 and 4.

Notes from Institutional Research on questions 1 and 4 (data files attached).

Response to questions 1 and 4
1. How are credits (e.g., AP, IP, Running Start, etc.) that incoming freshmen have earned prior to enrolling at UW distributed across the incoming class with respect to demographics?
4. Does the # of credits students earn from prior sources correlate to time to degree? [Is this correlation different for different CIP codes?]

Question #1 Demographics data: Credit distribution that incoming freshman earned prior to enrolling at UW

Population: Incoming Fall 2011 and Fall 2017 full time first year Seattle freshman (Fall 2011 is provided since the time to degree data is for incoming Fall 2011)

Caveat: AP/IB and transfer credits are not necessarily applied by census day of the first quarter a student attends. Some credits are applied to the student's record after fall census day. Analysis using external credits a student arrives with at the start of their career may not match that done on the same student at or after degree completion.

Two types of incoming credits
- AP/IB credits
- Transfer credits

There are four incoming credit buckets designating incoming credits prior to enrolling at UW: No AP or Transfer Credit, AP Credit, Transfer Credit, AP or Transfer Credit. Note that a student who has both incoming AP and incoming Transfer credit will be counted in multiple categories.

A credit range bucket was created that is the total of AP/IB and Transfer credits
- Zero
- 1 to 45
- 46 to 90
- GT 90

Excel File: Incoming Credits Freshman Demographics.xlsx

Worksheets
- Data: the raw data
  - SDBSrcSystemKey
  - AcademicQtrKeyId
  - IncomingYear
  - CensusDayCumAddtnlAppliedCredits   [number of AP/IB credits]

- o LowerDivisionTransferCredits
- o UpperDivisionTransferCredits
- o TotalTransferCredits   [number of transfer credits]
- o NoAPTransCred
- o APCred   [=1 if student has AP/IB credit]
- o TransferCred   [=1 if student has transfer credit]
- o ApOrTransferCred   [=1 if student has either AP/IB or transfer credit]
- o TotalAnyTypeCreditsRange   [the credit bucket range for sum of CensusDayCumAddtnlAppliedCredits + TotalTransferCredits]
- o IPEDSRaceEthnicityCategory
- o GenderCode
- By Bucket Pivot: a summary pivot of the data by type of incoming credit type, credit range bucket and number of students who are in each bucket
- By Bucket Graph: a graph linked to By Bucket Pivot with a filter allowing for limiting by either Fall 2011 or Fall 2017 or by incoming total credit range
- Gender Pivot: a pivot of the number of students by gender by incoming credit type, by incoming total credit range
- Gender Graph: a graph linked to Gender Pivot with a filter allowing for limiting by either Fall 2011 or Fall 2017, on incoming total credit range, or on Gender
- Ethnicity Pivot: a pivot of the number of students by ethnicity by incoming credit type, by incoming total credit range
- Ethnicity Graph: a graph linked to Ethnicity Pivot with a filter allowing for limiting by either Fall 2011 or Fall 2017, on incoming total credit range, or on Ethnicity

Question #4 Time to Degree: Incoming credits students earned from prior sources and time to degree, also available at the two digit CIP level

Population: Incoming Fall 2011 full time first year Seattle

Caveats
- We cannot provide accurate time to degree for 2012 cohort until after fall census day when the tables are updated in AIDB.
- AP/IB and transfer credits are not necessarily applied by census day of the first quarter a student attends. Some credits are applied to the student's record after fall census day.   Analysis using external credits a student arrives with at the start of their career may not match that done on the same student at or after degree completion.
- Students with a degree associated with more than one major in different CIP families will be counted in each CIP family
- Note that a student who has both incoming AP and incoming Transfer credit will be counted in multiple categories.

Two types of incoming credits
- AP/IB credits
- Transfer credits

There are four columns designating incoming credits prior to enrolling at UW: No AP or Transfer Credit, AP Credit, Transfer Credit, AP or Transfer Credit. Note that a student who has both incoming AP and incoming Transfer credit will be counted in multiple categories.

A credit range bucket was created that is the total of AP/IB and Transfer credits
- Zero
- 1 to 45
- 46 to 90
- GT 90

Excel File: Incoming Credits TTD.xlsx

Worksheets – There are three worksheets for each data set. The data itself, a pivot table which may be used to explore the data, and a pivot chart which may be used to explore the data. Each pivot chart is connected to the pivot table of the same name, if the data selected in one is changed, it will update the other. They are:
- TTD no CIP: Time to degree aggregated by credit range and type of credit at time of entry. Specifically answers Question #4.
- TTD buckets: Time to degree by two digit CIP by incoming credit range and incoming credit type. Best used when comparing a few specific CIP designations.
- TTD CIP no CR brkdwn: Time to degree by two digit CIP by credit type without incoming credit range.

Please note that the buttons on the graph can be used to further filter the data.

3. Distribution of college-level credits earned in high school among Areas of Knowledge

Data provided by the Office of the Registrar responding to our question 2: How are credits (e.g., AP, IB, Running Start, etc.) that incoming freshmen have earned prior to enrolling at UW distributed across the Areas of Knowledge?

Note that the Areas of Knowledge (AoK) are divided into three major categories:

Visual, Literary, and Performing Arts (VLPA)

Individuals & Societies (I&S)

Natural World (NW)

The following tables denote the distribution of credits earned/courses satisfied by entering freshmen in 2017 prior to enrolling at the UW across the AoK. The median is 20 credits, or 4 general education courses, and nearly half of the courses are in Natural World, with 22% in VLPS and 28% in I&S courses.

AoK Distribution for AP/IB/Ext and Running State/CHS for entering Freshmen 2017

VLPA Credits	I&S Credits	NW Credits
20445	26050	44101
22.6%	28.8%	48.7%

VLPA Courses	I&S Courses	NW Courses
4080	5210	9225
22.0%	28.1%	49.8%

Median Crs	Median Courses
20	4

Mean Crs	Mean Courses
21.851423	4.4657501

Mode Crs	Mode Courses
5	1

9/5/2018

Appendix B4. And 5.

4. See attached Excel file: Copy of Incoming Credits Freshman Demographics

5. See attached Excel file: Copy of Incoming Credits TTD

Appendix C

1. Student focus group questions and summaries
2. List of institutions explored/consulted

Appendix C 1.

1. Student focus group questions and summaries

Questions for all focus groups

1. How do you choose your general education courses (that is, courses that satisfy Areas of Knowledge requirements)? What do you hope to gain from those courses?

2. How do you choose your elective courses? What do you hope to gain from those courses?

3. How satisfied have you been with your general education courses? What would make general education courses better learning experiences?

4. Did you have college-level credits from Advanced Placement, International Baccalaureate, College in the High School, Running Start, or other sources when you first arrived at the UW? Knowing what you know now, would you have chosen your courses differently in high school, or during your first quarters at the UW?

5. If you had the opportunity to develop knowledge and/or skills outside of your major through a short program of courses and experience, would that interest you? What theme or topic would you want to pursue (for example, leadership, French poetry, data science, technical writing, etc.)?

6. Do you feel like you will be prepared to enter a career when you graduate? What advice would you give to new UW students around career/post-graduation preparation?

7. What factors influenced your choice of major? Is that the major you thought you would have when you arrived at the UW?

8. What else would you like to tell me about your experience as a student at UW?

Focus group summaries

This is a brief summary of the two focus groups we ran August 14, 2018.

Student majors represented included: Bioengineering, Computer Science, Business, Applied Computational and Mathematical Sciences, Computer Engineering, Biology, Physics, International Studies, Mechanical Engineering, Geography, Social Welfare, Pre-Engineering, Psychology, Creative Writing, Dance, Pre-Major (Computer Science); students had attended UW between 3 and 20 quarters (one early entrant student had 20 quarters, the next-highest maximum was 13).

Several themes emerged from the two groups:

1. There was a persistent feeling of **student as consumer**. Students frequently talked about choosing courses based upon professors' performance, as rated by websites like ratemyprofessor.com and internal UW professor rating sites. They often mentioned that they did not want their classes to be too hard outside of their majors. They also often mentioned choosing courses based upon their existing interests.
2. The students we talked to represented a **broad spectrum of ideas about higher education**, including exploration, skill-building, critical thinking. Some students were very vocationally focused, while others were highly motivated by the desire to learn new things and broaden themselves. It was not easy to discern how students were thinking about the tradeoff between breadth and depth.
3. Several students mentioned **practical concerns** about choosing courses. Foremost among these is where courses fit into their time schedules. One student mentioned worrying about getting from one class to another during the time allotted in between classes. Students repeatedly told us of difficulties getting into courses, especially lower-level courses. This was especially acute for one student who is a parent of two children and does not have the opportunity to frequently interact with the online system.
4. Students are **generally satisfied** with their courses. They recognize variations in the quality of instruction. One student hypothesized that professors seen as "harder" are actually more focused on students being motivated to learn on their own. One student was very upset with her major department, mostly because she felt that it was too theoretical. That same student was more satisfied with her major and minor courses than her general education courses, in part because she felt that general education courses did not merit as much toleration for things she didn't enjoy.
5. Several students commented on the **introductory courses in majors**, wondering if they could be more useful to a larger population. Students mentioned that these courses are generally extremely hard to get into. Some mentioned that they would like these courses to be structured so that an interested and engaged non-major can get something out of them.
6. There was a general feeling that students want more **hands-on experiences**. For some of them, this was a response to the perception that internships would be better preparation for jobs in industry. For others, this was expressed as a desire to do research as preparation for graduate school. Others thought they would make courses more engaging.
7. The idea of taking a bundle of courses organized around a theme met with **mixed reactions**. Some students explained that they are already extremely busy with their majors and did not seem to want to make another structured commitment. Others liked the idea of a sustained learning path beyond a single 10 week general education course. Students expressed concern about such a bundle becoming another (*de facto*) requirement. We did not discuss co-terminal master's degrees, etc.

8. Students were generally **not especially positive about AP, IB, etc.** One student mentioned that without Running Start, he would never have been prepared for a UW education, since his high school had some trouble with quality of instruction (an example being the chemistry class where students spent one day per week coloring). One student described taking IB courses for superior content, but regretting that he had not done what some of his classmates did: taking the IB courses and the AP exams for UW credit. One student discussed how AP exams in English and American History (as examples) were focused on regurgitating memorized material and did not lead to learning.

Student Focus Group #3
September 9, 2018
Notes on responses to each question.
Majors: ECO; JSIS; Computer sci; ECO and LSJ; Business; Pre-Engineering

1. How do you choose your general education courses?

   Outside the major, but sounds interesting;
   Looking for courses that relate to major;
   Take what I'm good at – wants easy good grades;
   Ask other students

2. How do you choose your elective courses? What do you hope to gain from those courses?
   Same, but more personal interest.
   Look for fun, easy courses.
   Took harder courses – ones that are prerequisites for competitive majors – but dropped them because worried they were too competitive and would bring down my gpa.

3. How satisfied have you been with your general education courses? What would make general education courses better learning experiences?
   GE courses mostly good.
   Some not easy enough, stretched my thinking too much.
   Courses could be advertised better.
   Took intro bio and intro comp sci but were "weed out" classes and had to drop because of low grades.
   Need classes to develop skills outside of major.

4. Did you have college-level credits from Advanced Placement, International Baccalaureate, College in the High School, Running Start, or other sources when you first arrived at the UW? Knowing what you know now, would you have chosen your courses differently in high school, or during your first quarters at the UW?
   Would have taken more AP to get out of AoK requirements.
   Nice having AP but didn't score high enough to get out of many requirements.
   Wish did more RS (had 72 credits).
   Wish I had explored more freshman year.

5. If you had the opportunity to develop knowledge and/or skills outside of your major through a short program of courses and experience, would that interest you? What theme or topic would you want to pursue (for example, leadership, French poetry, data science, technical writing, etc.)?

   Yes, might also help with exploration.

   Sounds sort of like a FIG but whole year.

   Would take topics like: Animal behavior/psychology. Language/culture.

6. Do you feel like you will be prepared to enter a career when you graduate? What advice would you give to new UW students around career/post-graduation preparation?

   Both my majors offer lots of internships, so yes I feel prepared.

   UW offers a lot of resources but I didn't know about them until I became an Orientation leader.

   Extra curriculars more important in preparing for workforce.

   Not ready not, but hopefully I will be… Need more skills to get an internship (i.e., excel, tableau, etc.).

7. What factors influenced your choice of major? Is that the major you thought you would have when you arrived at the UW?

   Still not sure of career goals but in ECO so will be working with people, though the major is not that specific.

   Yes, got into intended major (JSIS) and Comp Sci (wanted since middle school).

   Came here not knowing what to do, but advisor helped find ECO and LSJ. Wants to help people.

8. What else would you like to tell me about your experience as a student at UW?

   Some online classes are good, but supplemental fees for online made my parents really angry.

   Capacity constrained majors and "weed out" courses are hard for students to understand.

   Also need to educate the parents.

   Parents are very focused on jobs.

   Should have major information sessions for high school students so they are thinking ahead.

Appendix C 2.

2. List of institutions explored

Arizona State University

Bates College (Summer Program)

Cornell University

Florida Atlantic University (Research designation)

George Washington University

Georgia Institute of Technology (*International Plan and Research Designation)

Northeastern University (career services)

Ohio University

Stanford University (*Co-terminal Bachelor/Master's Program)

University of California Berkeley (*Data Science Initiative; *Interdisciplinary Humanities Courses for Freshmen; *Sutardja Center for Entrepreneurship & Technology)

University of California Los Angeles

University of Maryland College Park (*Freshman Research Experience Courses)

University of MInnesota

University of North Carolina Chapel Hill (scholar diploma designation)

University of Texas Austin (Freshman Research Experience Courses)

University of Virginia

University of Washington eScience Institute (*Data Science Option and other educational opportunities)

University of Washington Computer Science and Engineering Program (*5th year Master's program)

University of Washington Honors Program

University of Minnesota (*Leadership Minor)

University of Washington Online Bachelor of Arts in Integrated Social Sciences

Wake Forest University (career services)

*indicates personal interview