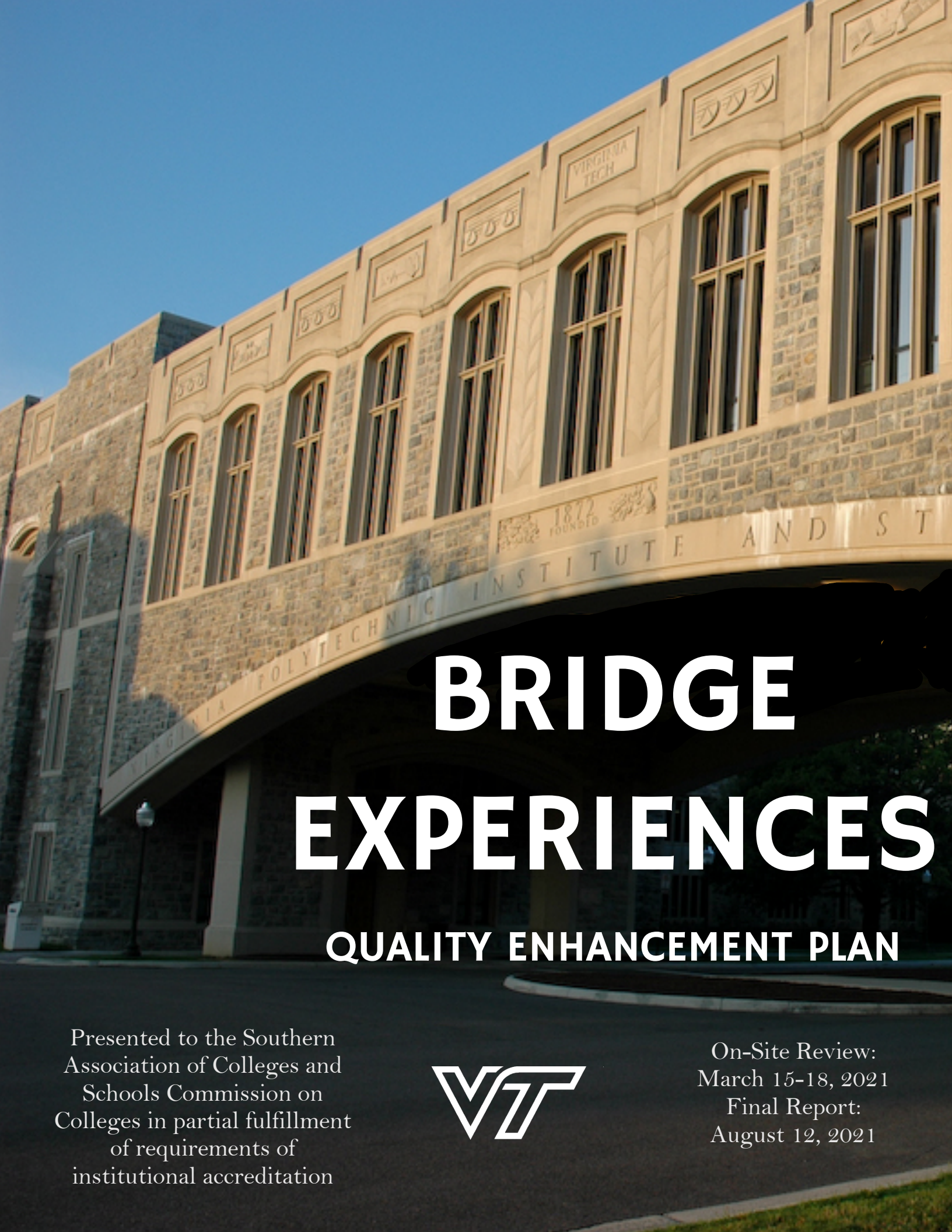

BRIDGE EXPERIENCES

QUALITY ENHANCEMENT PLAN

Presented to the Southern Association of Colleges and Schools Commission on Colleges in partial fulfillment of requirements of institutional accreditation

On-Site Review:
March 15-18, 2021
Final Report:
August 12, 2021

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EXECUTIVE SUMMARY

Virginia Tech is embarking on a bold, campus-wide Quality Enhancement Plan (QEP) to embed specific experiential learning, called bridge experiences, into the curricula of 50% of undergraduate academic degrees in the next five years. Bridge experiences are envisioned to integrate academic knowledge with an environment that is related to a student's intended career path and to bridge student development to the next step after graduation. Typical bridge experiences include internships, undergraduate research, and other site-based experiential learning.

Making this vision a reality challenges us to reflect on the ways in which our graduates can be better prepared for a meaningful career and life. Extending students' traditional classroom learning to tackle authentic problems and work in real-world contexts provides students motivation and passion to synthesize theory, concepts, and habits of mind thus maximizing their learning and development at Virginia Tech. If this vision is to become a hallmark of a Virginia Tech undergraduate education, these experiences must be available to all of our undergraduate students.

Implementation of bridge experiences will expand the "hands-on, minds-on" vision of the previous strategic plan to a holistic, experiential education envisioned for every Virginia Tech graduate as articulated in *The Virginia Tech Difference: Advancing Beyond Boundaries*, the university's strategic plan approved in 2019. With the support of the Board of Visitors, university leadership, faculty, and students, this QEP will stimulate increased participation in site-based experiential learning opportunities, as well as enhance the quality of those opportunities.

The Bridge Experience Program outcomes were informed by exemplary degree programs, institutional data, and educational literature. Successful program implementation will address increasing participation and learning quality for bridge experiences. Participation gaps will be addressed through curricular requirements creating *inescapable opportunities*. Students completing a bridge experience will be able to

- apply and connect their learning across academic and professional settings;
- demonstrate professional self-awareness by articulating their personal and professional development; and
- demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and their field.

The quality of learning will be assessed for each student learning outcome and will be based on best practices established by the National Society for Experiential Education. Students will develop an intentional plan for their experience, reflect on their learning, evaluate their performance, be evaluated by their supervisor, and present a culminating work.

To support implementation, the newly formed Academy for Experiential Learning will guide faculty teams through a structured process for implementing curricular revision. These efforts will be complemented by many existing offices that support experiential learning programs across Virginia Tech. University-wide programs are being developed to help address key concerns related to cost and communication of experiential learning opportunities, including developing an on-campus internship program and investing in infrastructure to centralize communication of opportunities.

The Bridge Experience Program is an ambitious undertaking to center experiential learning as a hallmark of a Virginia Tech education. To make these important learning experiences available to and required for all of our undergraduate students will be a true testament to Virginia Tech's dedication to a holistic education.

INTRODUCTION

Virginia Polytechnic Institute and State University is a Research I land-grant institution that was founded in 1872 with a main campus located in Blacksburg, Virginia. The comprehensive university consists of nine colleges representing 110 undergraduate majors and a graduate school representing 170 master's and doctoral degrees. After welcoming the most diverse entering class in history, Virginia Tech had 30,016 undergraduate students in fall 2020.

Students enter Virginia Tech from diverse backgrounds; with diverse skills, talents, and experiences; and, for diverse purposes. The concept of a VT-shaped education serves as a framework to plan and to implement learning experiences with the flexibility and challenge for students to become agents of their personal and professional development (Fig. 1). A student who completes a VT-shaped education is prepared to address 21st century challenges through interdisciplinary knowledge, disciplinary depth, purpose-driven engagement, and experiential learning. Each Virginia Tech undergraduate student will have a unique learning journey through curricular, co-curricular, and personal learning opportunities. Through twists and turns on the journey, students will discover new ideas, new talents, and what motivates them. Faculty engaged in intentional planning, development, and implementation of degree-based experiential learning will facilitate a purpose-driven educational journey for all Virginia Tech students.

FIG. 1. VISION FOR A VT-SHAPED EDUCATION

Undergraduate students begin their Virginia Tech journey living in the residence halls on campus while taking a discipline-based First Year Experience course, which is a sustained commitment from the previous QEP. Many of these students will also participate in one of 15 living-learning communities in their first year. During the early years, students explore courses as part of a newly implemented general education program with faculty communities developing around interdisciplinary general education minors. These early years are characterized by exploratory experiential learning supported by course-based or co-curricular activities that help with the transition to Virginia Tech and the development of foundational skills. As students develop, their interests shift to engaging in experiences to discern and to prepare for their post-graduation plans.

The theme of the previous QEP was to support students' successful transition to Virginia Tech through the First Year Experience. The focus of the current QEP is to support students' successful transition to post-graduation with a culminating experience that is uniquely designed to prepare a student for their next stage after graduation, whether that be a career or graduate or professional school. Bridge experiences in the forms of internships, undergraduate research, and other site-based experiences (including service learning and study away, as appropriate), provide students the opportunity to deepen their knowledge and skills as they apply in-class learning in real-world contexts. When these experiences are designed with intentionality, critical reflection, and ongoing feedback, they provide support for enhanced student development, learning, and success as students bridge to their post-graduation plans. With a commitment to the university motto, *Ut Prosim* (That I May Serve), this experience will not only better prepare Virginia Tech graduates for careers but will also integrate the importance of purpose-driven engagement in alignment with the land-grant mission.

A manifestation of *Ut Prosim* (That I May Serve) and the land-grant mission, the Bridge Experience Program will be a significant step in achieving Virginia Tech's Beyond Boundaries vision for an education grounded in work and learning that is purpose-driven and is no longer just co-curricular but embedded in and indeed integral to the curriculum. The program's five-year goal is for 50% of undergraduate degrees to have a required experiential learning component, termed bridge experience. To achieve this mission, the Bridge Experience Program will

- enhance the **quality of student learning** though bridge experiences by
    - integrating nationally recognized principles of best practice;
    - systematically guiding students through intentional planning, reflection, and synthesis of their experience; and
    - intentionally connecting experience to academic knowledge and skills in degrees.
- close student **participation gaps** in bridge experiences through
    - embedding experiential learning in undergraduate degree programs;
    - developing systematic support to connect students to opportunities; and
    - scaling opportunities to better match student needs and to overcome participation barriers.

TOPIC IDENTIFICATION

The Bridge Experience Program is the result of broad-based participation in university visioning and strategic planning processes, as well as iterative development committees, through which key campus constituencies were included for their expertise, experience, and support. The program was informed by baseline data on student participation and degree programs. With the large scope of the initiative, Virginia Tech has involved key stakeholders throughout the development process. Faculty, students, alumni, university academic and administrative leadership, and Board of Visitors members had opportunities to contribute to discussions about experiential learning at Virginia Tech through a variety of means, such as surveys, interviews, service on committees, or participation in forums. With strong involvement from Faculty Senate and a representative committee structure, broad-based involvement will continue throughout program implementation.

HISTORY

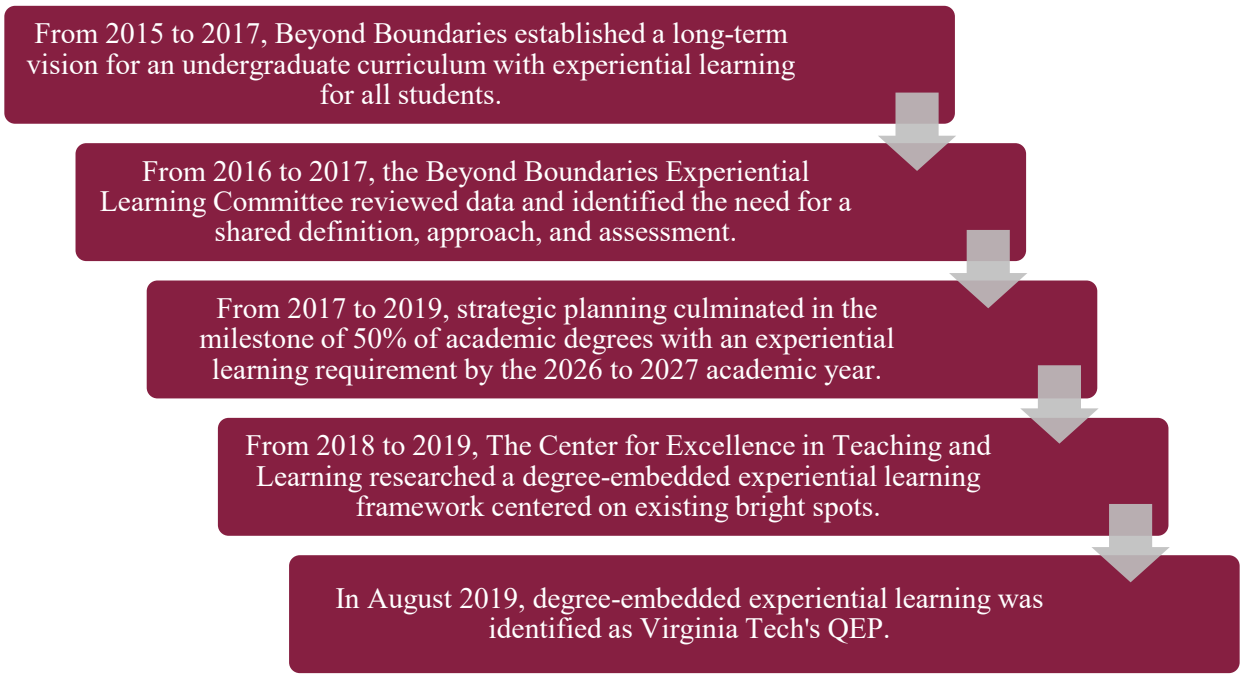
President Sands challenged the university community to envision Virginia Tech a generation into the future. The visioning process, called Beyond Boundaries, engaged more than 90 committee members during the 2015-2016 academic year to imagine what Virginia Tech could and should be. A thematic area group, "Preparing Students," was pivotal to identifying the importance of experiential learning through diverse perspectives and broad-based representation (see Appendix A). The group's work resulted in an educational model of VT-shaped learning, an approach integrating the university's commitment to discovery with its land-grant mission of outreach and application of knowledge in service to communities and society. The Beyond Boundaries vision called the university to further develop its curriculum so that graduates would demonstrate broad human-centered skills in addition to disciplinary knowledge required of professions. Experiential learning emerged as the critical model through which to achieve this goal, and a commitment to inclusion led to a goal of providing this education to *all* Virginia Tech students. The Beyond Boundaries vision set a bold goal: "experiential learning options will be built into and form the center of the learning environment" (Beyond Boundaries: A 2047 Vision, 2016).

> While many higher education institutions value all experiential learning variants—research, scholarship, internships, work experiences, service-learning, living/learning communities, study-abroad, and cooperative education—the variants currently are seen as add-on benefits rather than being integrated into curricular design for most undergraduates. As Virginia Tech incorporates curricular flexibility, experiential learning options will be built into and form the center of the learning environment.
>
> *-Beyond Boundaries: A 2047 Vision, 2016, p.11*

STRATEGIC TOPIC SELECTION

OVERVIEW

FIG. 2. TIMELINE FOR QEP TOPIC IDENTIFICATION



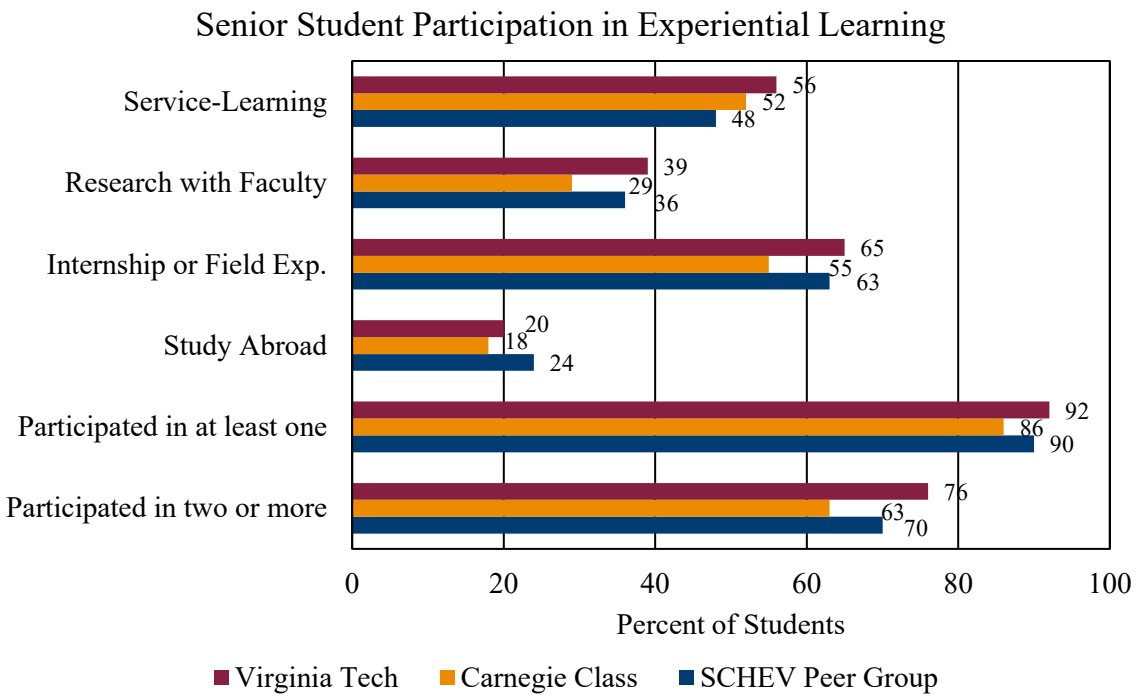
DEVELOPING THE BEYOND BOUNDARIES VISION

Purpose. Based on the Beyond Boundaries vision, President Sands charged the Beyond Boundaries Experiential Learning Committee in 2016 to understand the challenges and opportunities that face Virginia Tech with the goal of scaling access to experiential learning for all students. The committee membership represented diverse and broad-based constituencies including faculty, staff, students, and corporate partners (See Appendix A).

Actions. Committee members conducted research, site visits, and focus groups at Virginia Tech, peer institutions, and training centers. Members of the committee also attended the Association of American Colleges & Universities' (AAC&U) Summer Institute on High Impact Practices and Student Success.

Review of experiential learning data at Virginia Tech included the National Survey for Student Engagement (NSSE) in 2014. The NSSE analysis ranked Virginia Tech above the average of Carnegie and State Council of Higher Education for Virginia (SCHEV) peer institutions (Note: students self-reported, and likely over-reported, these experiences without any clear criteria, Fig. 3). The NSSE results were examined by disaggregated sub-groups. Females at Virginia Tech were more likely, while transfer and non-traditional students were less likely, to participate in experiential learning. Of course, participation alone does not provide clear evidence of learning or the alignment of experience with major or career goals. Thus, quality of and access to experiential learning opportunities were identified as a concern for Virginia Tech.

FIG. 3. NATIONAL SURVEY OF STUDENT ENGAGEMENT: VIRGINIA TECH VERSUS CARNEGIE AND SCHEV PEERS



As part of its work, the committee invited faculty, students, and staff to engage in participatory design sessions to investigate the barriers to student participation in experiential learning. Three themes emerged:

1. Cost. Experiential learning costs are supplemental to the regular cost of tuition and room and board. These costs may become affordable for students if they are guided in planning for the expense. For others, the cost is out of reach. Paid internships can yield a student a net income, although access to internships that provide a living wage is limited and varies by field.
2. Curriculum. Some degree structures have upwards of 130 credit hours and almost no free electives, which leaves students little room for experiential learning without extending time to degree. Curricula need flexibility to accommodate experiential learning.
3. Communication. The means by which students learn (or fail to learn) about experiential learning opportunities is inconsistent. A central clearinghouse for all opportunities is needed.

Recommendations. Based on their analysis, the committee recommendations included clarifying the definition of experiential learning, developing common learning outcomes, establishing essential elements, and creating action items. Many of these elements are reflected in the current structure of the proposed QEP. Recommended action items were used to inform next steps:

- Establish a center providing leadership and resources that includes
    - centralized support for students' financial planning and advising;
    - support and professional development for faculty and other partners;
    - a mechanism to collect and disseminate participation data;
    - a framework with the learning outcomes and essential elements; and
    - a network of colleges, departments, and other units to promote effective communication, bridge gaps, and minimize redundancies.

- Make strategic investments that include
    - a proof-of-concept pilot program;
    - an inventory and analysis of ways to optimize use of existing resources; and
    - a plan for financial support including corporate partnerships and scholarships.
- Foster a culture that values, supports, and celebrates experiential learning and includes
    - recognition and rewards for faculty and staff supporting experiential learning;
    - incentives for building experiential learning in the curriculum;
    - educational scholarship and media; and
    - a university-wide experiential learning event.

The thorough work of the Beyond Boundaries Experiential Learning Committee provided a basis for ongoing and continuous planning through the development of the university's new strategic plan.

STRATEGIC PLANNING AND ADVANCING BEYOND BOUNDARIES

Purpose. Beyond Boundaries set the 2047 university vision for the importance of experiential learning in undergraduate education. The next step was to identify the concrete starting point for this vision through strategic planning for the first 5-year milestone. The strategic planning process operationalized the Beyond Boundaries vision culminating in *The Virginia Tech Difference: Advancing Beyond Boundaries* (the following is sampled directly from Strategic Planning Data Analysis, 2019).

Actions. The leadership and staff of Strategic Affairs conducted a comprehensive and exhaustive process to solicit feedback and develop themes and strategic priorities from various types of campus engagement sessions: roundtable discussions, the Diversity Summit, and fall engagements. The engagement sessions were conducted in 2018 across Virginia Tech's geographic locations including Blacksburg, Roanoke, Alexandria, Arlington, and Falls Church. Strategic planning conversations and feedback sessions involved faculty, staff, students, alumni, and external advisory board members from various disciplines, levels, colleges, institutes, and units. The sessions focused on strategic priorities, key areas of focus, and challenges and opportunities. Collective attendance at the engagement sessions was greater than 1,000.

Qualitative analysis identified emerging themes, related concepts, ideas, and suggestions. In each of the engagement sessions experiential learning emerged, and the topic was indicated as a "most frequent" concept during the roundtable discussions (eighth most frequent) and Diversity Summit (third most frequent).

Two primary concepts around experiential learning emerged: the actual experiences and access to those experiences. Throughout the engagements, common themes surrounded increasing participation in experiential learning opportunities such as undergraduate research, internships, study abroad, and service learning, suggesting better support systems were needed to cultivate these opportunities. Participants recommended setting goals related to experiential learning while also considering preparing students for careers through rich lived experiences. Results of the strategic planning process indicated Virginia Tech should begin with the end in mind when integrating experiential learning into the curriculum through broad faculty involvement.

The strategic planning process identified student access as an important concept, it highlighted the importance of inclusion of all students in any new initiative. Financial concerns surfaced in many discussions specifically around the affordability of study abroad and unpaid internships. Additional areas of concern involved the intersection of financial need and historically underrepresented groups and disciplinary differences in the availability of experiential learning opportunities.

Recommendations. As the strategic plan was finalized and approved by the Board of Visitors in 2019, the milestone of degree-embedded experiential learning was included as part of Strategic Priority 1: Advance Regional, National, and Global Impact. The milestone is for 50% of academic degrees to have a required experiential learning component by the 2026-2027 academic year. Implementing a curricular requirement aligns well with feedback related to curricula and access while also emphasizing career preparation.

DEGREE-EMBEDDED EXPERIENTIAL LEARNING

Purpose. In April 2018, the interim provost charged the Center for Excellence in Teaching and Learning (CETL) to create a framework for degree-embedded experiential learning consistent with the work of Beyond Boundaries and strategic planning. In addition, CETL was charged to present a vision for an integrated network of campus partners and faculty, which would form the Academy for Experiential Learning. A large portion of the foundational work, reviewing external best practices, and recommending systemic changes was completed by the Beyond Boundaries Experiential Learning Committee, which allowed the framework and academy vision to focus inward on the academic programs and students who were exemplars of best practice in experiential learning at Virginia Tech.

Actions. The university adopted the guiding principle of building from bright spots to learn from the excellent work already being done in some degree programs. Studying the programs with embedded experiential learning revealed effective strategies that made degree-embedded experiential learning possible within the context and culture of Virginia Tech.

Exemplary departments. In 2017, the theme of the Provost's University Exemplary Department or Program Awards was experiential learning. From twenty departments submitting award packets, inclusive of the three award winning departments, department chairpersons and faculty were interviewed to inform the process of increasing the number of degree programs with embedded experiential learning. Interviews focused on the curricular change process, challenges departments faced, and how these exemplary departments developed a culture of experiential learning.

The interviews revealed unique participation challenges for each department depending on the discipline and student body subgroups. For example, in Apparel, Housing, and Resource Management, fashion merchandising students do not have many opportunities for internships in the region. Therefore, the department provides students with early planning support that better enables them to intern in a large US city or abroad. In the Department of Sustainable Biomaterials, the chair described his program as a "discovery major," meaning students transfer to the program from other majors; in addition, students are often juniors requiring proactive advising to ensure they plan for experiential learning as soon as they declare the major. In Materials Science Engineering, the few students not engaged in internships already had job placements after graduation and indicated they "didn't need it to find a job."

The department chairs' responses to the other interview questions revealed similar experiences across the departments. For example, when asked about the history of experiential learning, the department chairs revealed that a significant shift took place when the departmental faculty recognized experiential learning as a fundamental part of their degree program. The second similarity was the importance of advising in their success with experiential learning. When asked about where other departments should start, the answer was clear: start at the end. By implementing a culminating experience near the end of the program of study, students integrate the experience in their plan of study, and other aspects of the curriculum are informed by student performance in those experiences.

Mapping student journeys. University Relations and the college-level communication directors often write stories about students who exemplify a Beyond Boundaries education. To better understand the role of experiential learning for students held up as exemplars, learning journeys of Virginia Tech students and recent alumni were mapped using the Perna and Thomas (2008) student success longitudinal model. The learning journey maps demarcated exemplary students' background/preparations and their curricular, co-curricular, and experiential learning to understand common characteristics of their learning journeys. The journey mapping exercise revealed the students had the following in common: (1) they engaged in exploratory/early experiences including clubs and job shadowing and (2) all engaged in culminating experiential learning inclusive of internships, study abroad, and/or research, but the type of experiential learning varied based on discipline and projected plans after graduation.

Recommendations. Connecting the work of the Beyond Boundaries Experiential Learning Committee with the interviews and journey mapping from the bright spots work, a vision report was written for the Provost in July 2018 and presented to the Academic Affairs Council in October 2018. The report further specified details of strategically integrating experiential learning in degrees with recommendations to:

- focus on culminating experiential learning (internships, research, study abroad, leading service) in the later years of students' plan of study;
- strive for access and equity by embedding the experiences in the degree;
- match experiences to student goals based on disciplinary area and student-projected plans after graduation;
- engage faculty and advisors as change agents for curricular redesign and supporting student planning; and
- integrate operations and centralize functions to support the work of faculty, advisors, and students.

An Academy for Experiential Learning was proposed to support the implementation of the program.

DATA-INFORMED PROGRAM DIRECTION

To inform the development of a degree-embedded experiential learning program, existing data were explored to establish baseline participation in experiential learning. The data collection process revealed decentralized sources of experiential learning data and gaps in sources of comprehensive, direct evidence of student participation and learning from experiences. Multiple sources of student self-reported data were available and analyzed. As the initiative focuses on experiential learning that serves to bridge from undergraduate studies to post-graduation plans, we also explored data to better understand students' career and continuing education intentions.

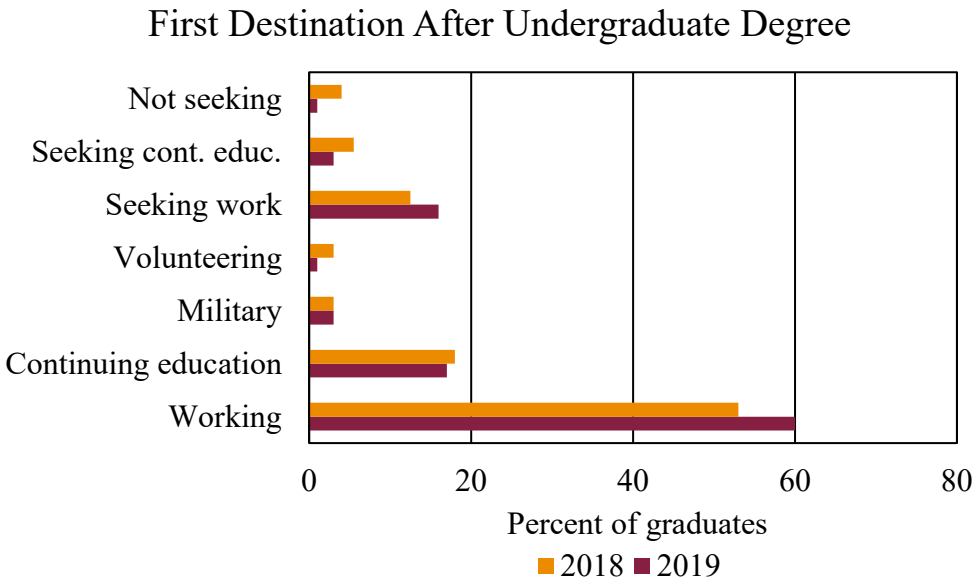
The National Survey of Student Engagement (NSSE) was conducted in 2020 and Gallup-Purdue Index in 2018. Data analysis focused on responses from seniors for questions related to experiential learning and career readiness. While the national survey data are interesting and help us better understand how Virginia Tech compares to peer institutions, the low response rate calls into question the validity of the data and the usefulness in developing a university-wide program. Virginia Tech Career and Professional Development administers an exit survey for recent graduates and includes items for students to indicate experiential learning participation. The two most recent years of data (2017 - 2018 and 2018 - 2019 graduates) were explored further. In addition to NSSE and Gallup-Purdue survey data, student participation in course-based experiential learning labeled through university governance was analyzed. In addition, some departmental units include experiential learning data as part of their program

assessment metrics. Although all data sources were analyzed, the exit survey data are highlighted here to describe the current status of experiential learning at Virginia Tech.

GRADUATES' FIRST DESTINATIONS

The student exit survey reveals most Virginia Tech graduates' first destination is work with slightly less than 20% planning to continue their education in graduate or professional schools (Fig. 4). It is imperative that these students are well prepared for this next stage after graduation, whatever that may be. More concerning is the approximately 20% of graduates who are still searching for employment or education opportunities. A similar percent of students did not agree that Virginia Tech prepared them to be successful in the workplace (19%, Gallup) or life outside of college (25%, Gallup). These graduates would benefit from additional career exploration and preparation to inform their post-graduation plan, to make them more competitive for work or continuing education opportunities, and to help them feel more prepared for life beyond Virginia Tech.

FIG. 4. FIRST DESTINATION OF VIRGINIA TECH GRADUATES WITHIN 6 MONTHS AFTER GRADUATION

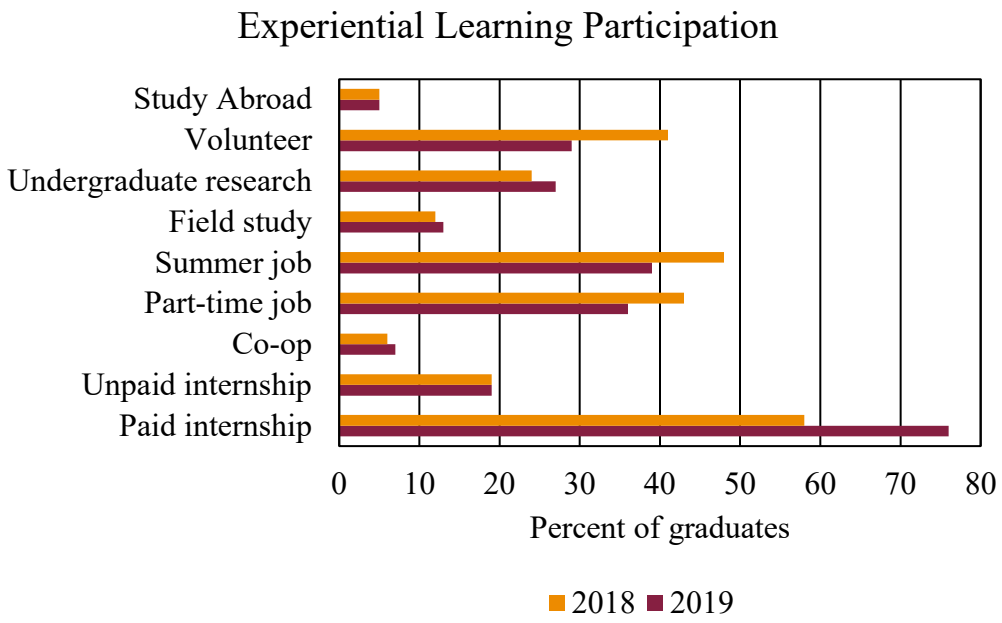


CURRENT EXPERIENTIAL LEARNING PARTICIPATION

Based on surveys of recent graduates, the overwhelming majority of students participate in a career-related experience (93% in 2018 and 88% in 2019). Career-related can be broadly defined and does not inherently indicate a quality experience. Graduates indicated what experiential learning activities they participated in during college; the types of experiences varied by college, highlighting the discipline-specific nature of students' interests (see Appendix E, Table E1). Notably, many had paid internships, which is supported by Gallup-Purdue Index data (69% paid and unpaid internships), but students participated in a range of activities and sometimes more than one. Yet, not all experiential learning activities equally prepare students for future careers. Recent Gallup-Purdue data indicate 92% of students' internships were related to their field while only 38% of paid jobs were. Current participation data can be viewed as an optimistic situation when framed in the context of bridge experiences. Across years, most

trends are consistent but the absolute values do vary. These data are still self-reported by students, and some of the variation between years may be attributed to response bias.

FIG. 5. CURRENT STATE OF EXPERIENTIAL LEARNING PARTICIPATION REPORTED BY VIRGINIA TECH GRADUATES



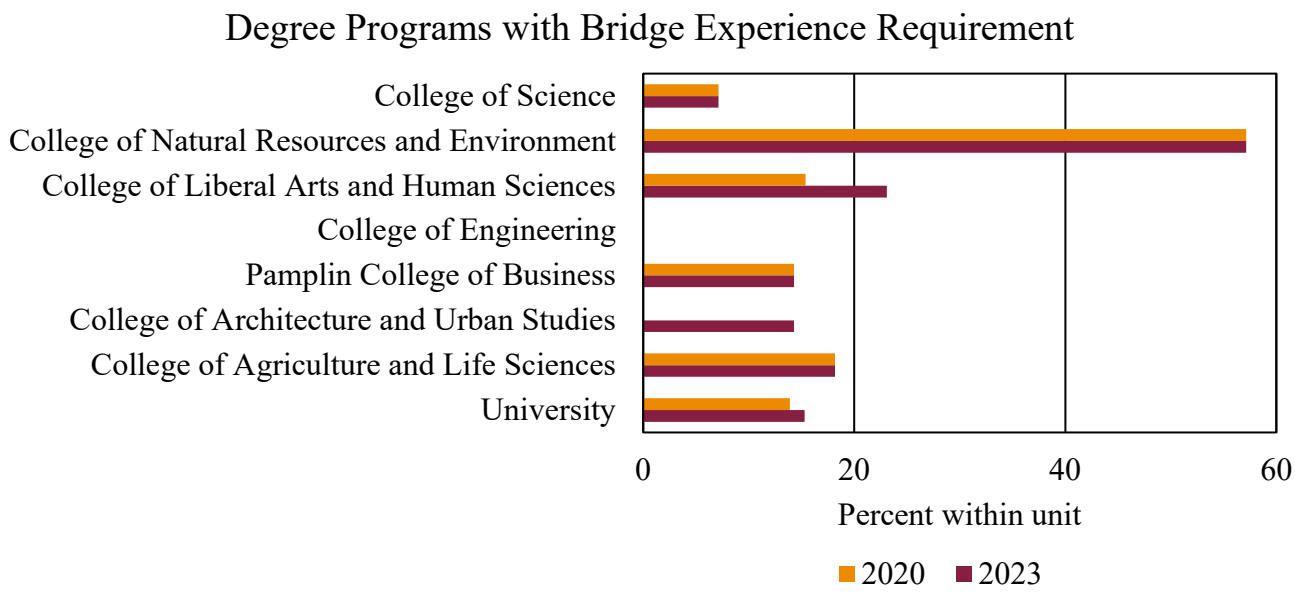
Of the data analyzed from multiple sources, study abroad had the most objective and detailed information available, as students must go through the Global Education Office to participate in a Virginia Tech sponsored program. Approximately 1,300 students study abroad each year and individual students can be identified in the data. A goal of the program implementation will be to create a robust system to capture experiential learning participation allowing it to be disaggregated by academic unit and/or subgroups of interest.

The senior exit/first destination survey (see Appendix E, Table E1) has the highest response rates of all survey data available (69% in 2018 and 55% in 2019). Survey results reveal high levels of student participation in paid internships in the Colleges of Business, Engineering, and Architecture and Urban Studies with percentages ranging from 77% to 93%. In the College of Science, approximately 50% of students report engaging in undergraduate research while the other colleges show a more even distribution of participation across experience types. It is notable that 2019 graduates reported higher levels of participation in paid internships than the 2018 graduates in all colleges, although the response rate was lower in 2019. With healthy participation in career-related experiences, Virginia Tech is starting from a place of strength to continue to increase student engagement in experiences to support their bridge to plans after graduation. It will be important to be mindful of the ratio of unpaid internships to paid internships as we engage with more external partners. Students in the Colleges of Agriculture and Life Sciences, Liberal Arts and Human Sciences, and Natural Resources and Environment are more likely to report having unpaid experiences. (Note: The 2020 senior exit survey was postponed due to COVID-19, the most recent data available were from 2019).

BASELINE FOR DEGREE-EMBEDDED BRIDGE EXPERIENCE

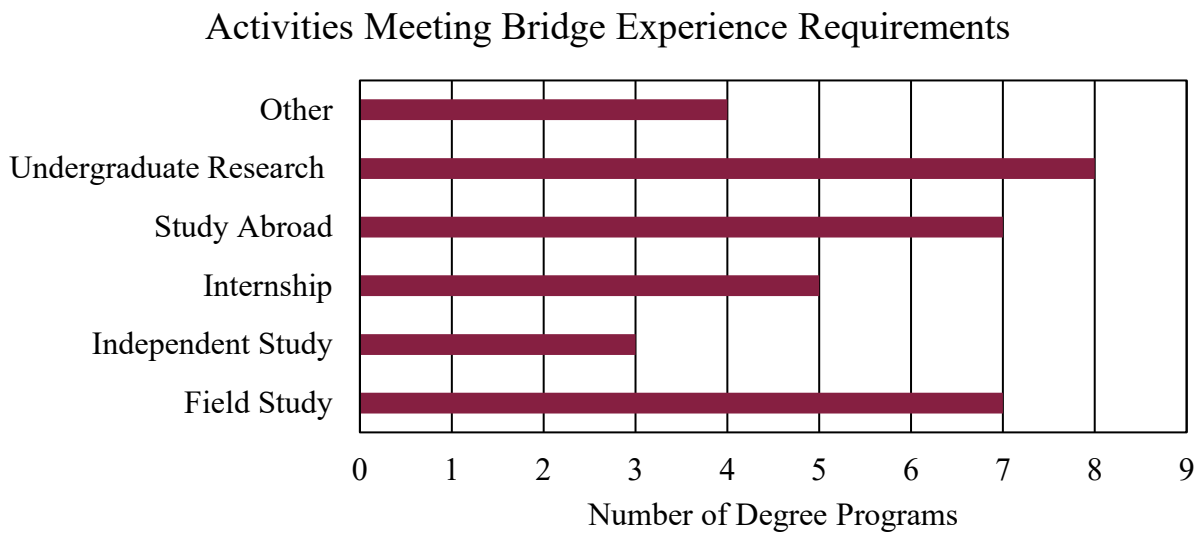
To support student preparation for their post-graduation career path, the university will embed bridge experiences in degree program requirements. An analysis of degree requirement checksheets revealed 14% of degree programs had a requirement for all students. The number of degree programs with requirements will increase to 17% for the 2023 graduating year. Presence of this requirement varies by college with the College of Natural Resources and Environment surpassing 50% of degree programs, while the College of Engineering has no such requirements implemented (Fig. 6). The absence of requirements is not directly tied to student participation in bridge experiences in some colleges but there is a lack of documentation of activities and learning. To demonstrate, the College of Architecture and Urban Studies, Pamplin College of Business, and College of Engineering consistently have greater than university average participation in paid internships, but all have below average integration of facilitated learning processes for experiences in degree programs. If experiential learning is to be a defining characteristic of a Virginia Tech degree, integration with the academic curriculum will be essential to support the quality of the learning with the increase in participation.

FIG. 6. PERCENT OF DEGREE PROGRAMS WITH BRIDGE EXPERIENCE REQUIREMENTS BY COLLEGE FOR 2020 AND 2023 GRADUATES



The 21 degree programs with existing requirements often have multiple ways for students to meet that requirement. These activities are varied and span the range of traditional types of experiential learning (Fig. 7). Among these, service learning is notably absent but may be categorized under one of the existing descriptors. One challenge here is the inconsistent definition of categories such as independent and field studies across disciplines. These inconsistencies limit the tracking of participation in the current framework.

FIG. 7. TYPES OF ACTIVITIES MEETING EXISTING BRIDGE EXPERIENCE REQUIREMENTS



The experiences different disciplines choose to serve to meet an experiential learning requirement are informed by students' paths after graduation as well as the experiences most valued in the field (Table 1). For example, Hospitality and Tourism Management only allows field study (in the College of Business, field study is equivalent to an internship) to meet the experiential learning requirement; however, in Nanoscience, only undergraduate research meets the requirement. Other disciplines allow for a range of activities with an intentional match between the experience type and students' future plans.

TABLE 1. DOCUMENTED ANALYSIS FOR BRIDGE EXPERIENCE REQUIREMENTS FOR 2023 GRADUATES. BRIDGE EXPERIENCES WERE EITHER REQUIRED FOR ALL GRADUATES, REQUIRED FOR AT LEAST HALF OF ALL MAJOR/OPTION COMBINATIONS, OR REQUIRED FOR AT LEAST 1 MAJOR/OPTION COMBINATION WITHIN THE PROGRAM.

Degree program	Internship	Undergraduate research	Study abroad	Field study	Independent study	Other
Required for all graduates						
Agricultural Sciences	X	X	X	X		
Apparel, Housing, and Resource Management		X	X	X	X	
Applied Economic Management	X					
Fish and Wildlife Conservation	X	X	X		X	
Geography		X	X	X		
Hospitality and Tourism Management				X		
Human Development				X		X
Interior Design	X		X			
Meteorology	X	X	X			X
Music		X		X	X	X
Nanoscience		X				
Sustainable Biomaterials		X	X	X		X

Degree program	Internship	Undergraduate research	Study abroad	Field study	Independent study	Other
Required for most graduates						
Agribusiness	X					
Forestry Resources and Environmental Conservation				X		
Geosciences		X	X	X	X	
Human Nutrition, Foods, and Exercise		X	X	X	X	
Religion and Culture				X		
Required for some graduates						
Art	X			X		
Business Information Technology				X		
English				X		X
Sociology	X					

DATA GAPS

Students who are not participating. In addition to a reliance on student self-report data for participation, another notable gap in program development data is a lack of nuanced understanding of why students do not engage in these experiences. A university-wide survey of students was planned for August 2020. Due to COVID-19, the survey was postponed as the focus shifted to the immediate support needs of students and faculty with remote instruction. To fill this data gap, the Beyond Boundaries Experiential Learning Committee's participatory design data was used to identify challenges. Also, the pilot departments conducted surveys of their students in fall 2020.

In spring 2020, due to the pandemic, experiential learning opportunities were cut short with the March lockdown. Some students were fortunate to have an experience pivot to remote work. To resume experiential learning safely for fall 2020, the university implemented a risk acknowledgement system for students and their supervisors. Although the primary intent was for the safety of students and faculty, we were able to gather an inventory of students' experiential learning in fall 2020 (see Appendix E). This process revealed the benefits of having a central experiential learning database while informing key functionality needs of a future technology system.

Learning quality. Throughout the data analysis, the most notable takeaway is the absence of consistent and holistic mechanisms for gathering information regarding quality of existing experiential learning activities. From survey data, students are reporting high levels of participation in several colleges, but because those experiences are not systematically connected to academics, we are unable to discern what the students are learning and/or if evidence-based best practices are in place. In departments with embedded experiential learning and existing assessment structures, the program-level assessment captures student experiential learning and allows for program-level improvements.

Participation accuracy and disaggregation. Stakeholders ask for participation percentages in different experiential learning activities, but we do not have reliable estimates. Data are generally self-reported by students and are subject to the inherent complexities of reporting bias and response rates. We believe some gaps in experiential learning participation are in underrepresented minorities, particularly in

disciplines with limited experiential learning participation. The NSSE data show both underrepresented minorities and first-generation college students have less than average participation in internships and related experiences but more than average participation in research. These issues need further exploration to ensure equitable access to bridge experiences to support career preparation. Embedding bridge experiences in degree programs enables outcome tracking. By tracking both participation and quality metrics, our ability to identify inequities among our students and to document experiences for employers will improve.

RECOMMENDATIONS

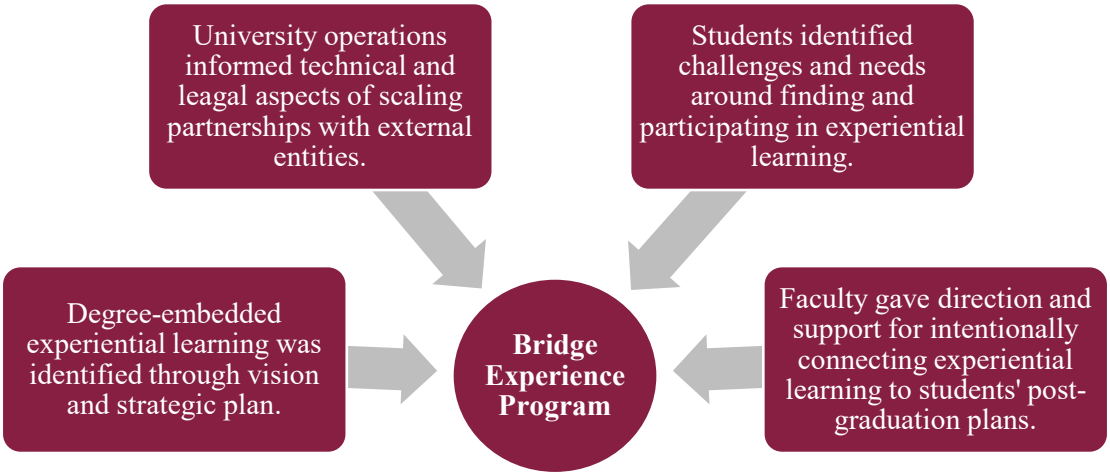
One of the largest procedural challenges we face is understanding the learning quality of existing internships. Self-reported student data indicate a majority of students (58 to 76%) participated in paid internships during their time at Virginia Tech; however, for the 2021 graduation year, only 14% of our degree programs had an explicit bridge experience requirement for all students. Data indicate students are taking advantage of these experiences, but we have limited formal institutional guidance on best practices or mechanisms for measuring student learning. To address data gaps and gather reliable information to inform academic decision making, we need:

- a robust, university-wide tracking system to document internships and learning that integrates into existing systems such as course registration and Degree Audit Report System;
- consistent use of existing course numbers;
- formal mechanisms to ensure quality; and
- structured student assessments, feedback, and reflections on the experience.

These changes will improve workflow and prevent the duplication of efforts so individual departments and colleges can focus on program-specific reforms.

TOPIC REFINEMENT

FIG. 8. STAKEHOLDER ENGAGEMENT TO REFINE DEGREE-EMBEDDED EXPERIENTIAL LEARNING INTO THE BRIDGE EXPERIENCE PROGRAM



OPERATIONAL INPUT

Purpose. As the university plans to embed experiential learning in each degree, the number of experiential learning opportunities must scale, and the number of external learning partners working with academic departments will increase. At a comprehensive institution the size of Virginia Tech, external partnerships vary based on the complexity of the partnership as well as the assessed risk and opportunity of student work. Some external partners offer internships of low risk and with minimal complexity of relationship, while others offer experiences with citizenship requirements and/or the need for security clearance. In the summer of 2019, the External Learning Partnership Task Force was convened to develop guidance on university needs around external learning partners, and membership was representative of both academic and administrative units engaged with external learning partnerships (see Appendix A).

Actions. Task force members surveyed Virginia Tech faculty currently engaged or proposing to engage in an external learning partnership program (see Appendix B). The survey asked questions regarding key components that would introduce risk or inefficiency in the set up and management of an external learning partnership program, including agreements, student intellectual property, citizenship requirements, security clearances, exchange of proprietary information, and potential intersection with export control regulations. The group also reached out to other universities and researched similar programs to inform practices and recommendations.

Analyzing survey responses, the task force identified the need for consistent definitions of experiential learning (similar to the findings of the Beyond Boundaries Experiential Learning Committee) and of external partnerships. Regarding external partnerships, some departments described specific naming conventions based on financial support while others focused on the partners' involvement. Examples of external partners provided were U.S. Department of Defense and the intelligence community; local, state, and other federal government agencies; non-profit agencies; industry; start-up companies; and community groups.

The task force surveyed six other institutions regarding their external partnership procedures and processes. In addition, the members reviewed documentation for Virginia Tech programs managing external partnerships. The external survey and the internal review of procedures revealed Virginia Tech's current external learning partnership environment consists of a wide variety of program constructs. Department-administered programs exist, but these programs operate differently from each other. Some programs are more streamlined in their documentation and procedures but still occasionally have to negotiate terms and conditions with individual external partners on a case-by-case basis. Programs even have varying definitions for what constitutes experiential learning and external partnerships. Some similarities in approach and documentation exist, but the data suggest that these programs have more differences than similarities.

Recommendations. The task force presented the following recommendations and next steps to support the scaling and management of external learning partnerships for the university's strategic initiative:

- centralize services and support for external learning partnerships;
- establish common practices and standards for initiating and managing external learning partnerships through uniform workflows (a draft workflow is diagramed in Appendix B, Fig. B3);
- develop and maintain an external learning partnership toolkit for faculty based on documents collected by the task force; and,
- develop a communication plan to ensure uniform implementation across the university.

The task force realized its efforts were incomplete and additional time and effort will be needed to provide a more accurate understanding of external learning partnerships and implementation of recommendations. Through an expanded group in partnership with the Opportunity Providers Advisory Committee, the task force will reconvene once the QEP is in implementation phase and resources are in place to support the recommendations.

STUDENT INPUT

Purpose. In the spring of 2020, an undergraduate public relations class, PR 3144: Writing and Editing for Public Relations, was engaged to create communications materials from a student point-of-view. While students were engaged as committee members and were invited to the participatory design sessions, we felt it was important to engage students outside of committees to understand how students perceived the initiative and how they would communicate it to other students. The students gained a real-world client as they learned to develop a fact sheet, speech manuscript, news release, brochure, newsletter, and media kit.

Actions. In February 2020, the initiative was presented to the students followed by a discussion. Although the upper-level students were all from the same department, the class included students who studied abroad, were in the Virginia Tech Corps of Cadets, were resident advisors, completed internships, and were applying to internships. We learned students perceived their engagement in experiential learning developmentally. They described the importance of early experiential learning opportunities in their residence halls and through service to help them transition to the university. They went on to describe how their interest in engaging in experiential learning shifted as they moved into the end of their second year and into their third year of studies. Some students used experiential learning to explore next steps after graduation, while others discussed the importance of gaining real-world experience to become competitive applicants in the workforce. Interestingly, the students gravitated to describing their experiential learning in phases: Phase 1 experiential learning helped them transition and acclimate to the university, while Phase 2 experiential learning helped them discern their post-graduation interests and prepare for their future plans.

The student groups developed communication materials and presented those materials to the Faculty Senate President, the Associate Vice Provost for Communications, and the Associate Vice Provost for Teaching and Learning. Examples of student communication products are included in Appendix C. The students answered questions about their communication products, and although the focus of the class was on public relations, the students offered their perspective on needed student services and supports for the initiative.

Recommendations. The PR 3144 students recommended the following for enhanced services, support, and opportunities:

- increase opportunities for local internships and research during the academic year [students cited the need to take summer jobs and to fulfill Virginia Tech Corps of Cadets leadership training as a reason for providing more opportunities in the fall and spring];
- facilitate earlier planning [students would have engaged in more and/or different experiential learning if they had planned sooner; some students noted that the First Year Experience instructor in Communication integrated the discussion of experiential learning, and some students were exposed to study abroad and on-campus opportunities during FYE]; and,
- create easier connections with paid opportunities [students described trouble with "finding" opportunities, especially paid internships in a field of interest].

FACULTY INPUT

Purpose. Although the topic of culminating experiential learning had been identified as the QEP, more refinement was needed to develop a clear plan forward. Faculty committee members were nominated through Faculty Senate and charged to refine the focus of the QEP and to create a framework (characteristics, student learning outcomes) to inform program development.

Actions. In consultation with the Provost's Office and Faculty Senate, the program co-leads recommended a committee structure to support the initiative (see Faculty Advisory Committee). The Faculty Advisory Committee was formed by seeking faculty senator nominations for departmental colleagues with expertise in experiential learning. Nominees were asked to express their interest in participation. Faculty Advisory Committee members (Appendix A) convened in June 2020 to narrow the focus of the initiative, to operationalize the learning and characteristics of experiential learning, and to propose a program design for Faculty Senate review.

Faculty Advisory Committee members reviewed the work of previous development groups and presented practices and recommendations from their respective colleges for committee consideration. By October, the Faculty Advisory Committee had drafted a document *Faculty Perspectives on Experiential Learning* (see Appendix D). The committee defined experiential learning broadly and operationalized the focus of the initiative on types of experiential learning to support students bridging to careers. Essential components and learning outcomes were reviewed and drafted for Faculty Senate review.

On October 16, 2020, the chairperson of the Faculty Advisory Committee, with other members in attendance, presented to Faculty Senate. Senate representatives asked questions about the definition and a focus on career. Overall feedback from the Senate supported the bridge to future endeavors with a focus on learning. The Faculty Advisory Committee reconvened and adjusted the components to address the concerns of Faculty Senate to ensure the initiative was not reduced to career and technical training. Revisions were presented to Faculty Senate leadership on October 30, 2020.

Recommendations. With support from Faculty Senate, the Faculty Advisory Committee recommendations and outputs encompassed:

- a broad framework to view experiential learning based on content, context, and student learning outcomes;
- a clear path, with broad faculty support, to pursue bridge experiences to help students transition from Virginia Tech to their career; and
- contributions to the Bridge Experience Program through defined characteristics of bridge experiences and draft student learning outcomes.

FINAL SELECTION

At a meeting of the Academic Affairs Council, Provost Clarke announced he supported degree-embedded experiential learning as Virginia Tech's QEP for several reasons:

- Experiential learning has clear community support across a wide range of constituency groups.
- Experiential learning is a focus in the Beyond Boundaries vision and the strategic plan.
- Expanding experiential learning to all degrees (50% of degrees in five years) is feasible because it builds on the programs demonstrating success with existing degree requirements.
- Embedding experiential learning in degree programs to engage ALL undergraduates has great potential to differentiate the quality of a Virginia Tech degree.

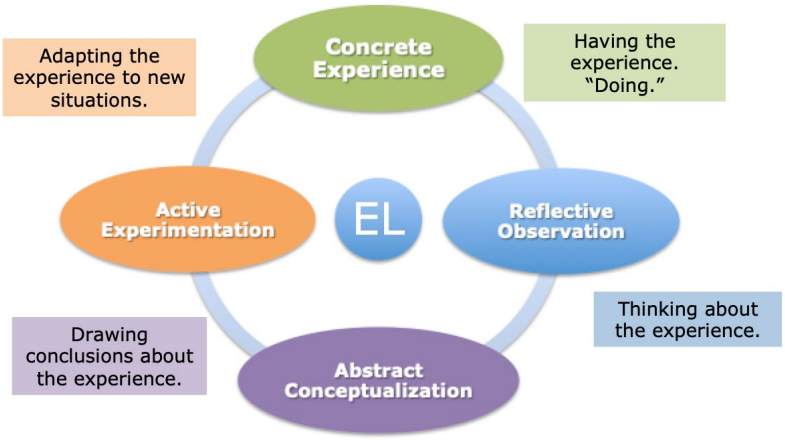
LITERATURE REVIEW

KOLB'S CYCLE OF EXPERIENTIAL LEARNING

Grounded in learning theory, the Bridge Experience Program has the potential to enhance the educational quality of culminating experiential learning opportunities. Building on the foundations of early educational psychologists, Kolb's seminal work *Experiential Learning: Experience as the Source of Learning and Development* (1984), explains a model of learning that integrates experience with perception, cognition, and behavior. The key elements of Kolb's model--concrete experience, reflective observation, the formation of abstract concepts, and the testing of new knowledge through active experimentation--provided a learning framework from which the essential components of bridge experiences were developed.

Kolb presents experiential learning in a cycle with student learning beginning at any of the four stages. The intentional self-observation and reflection connected to an experience shifts the focus from having experiences to learning from experiences. Later modifications of Kolb's model consider non-linear learning processes and accommodate features of contemporary educational structures.

FIG. 9. KOLB'S CYCLE OF EXPERIENTIAL LEARNING (KOLB, 1984)



Bridge experiences apply Kolb's theory, which includes four steps.

Concrete experience: The student has an authentic real-world experience that is neither contrived nor controlled. The student must apply academic learning and skills in an experience of substantial duration and depth.

Reflective observation: The student does a realistic self-appraisal, analysis of activities and events, and discussion about what has been learned with supervisors or peers. The student should engage in the reflection systematically to enable behavioral change for future activities or experiences.

Abstract conceptualization: The student places the experience in context informed by disciplinary theories and activities. This process challenges the student's existing understandings, perceptions, or beliefs. The conceptualization phase promotes learning through subsequent changes in attitudes and behavior.

Active experimentation: The student applies ideas and insights from experience and reflection to another experience (or another day of an experience). New behaviors or attitudes become the object of subsequent reflections beginning the cycle again.

Aligning Kolb's model with the university's focus on a holistic education and with research on assessing students from a variety of perspectives (Ash & Clayton, 2009), we will use reflection to promote student learning and development across multiple learning outcomes. We will encourage reflective observation, abstract conceptualization, and active experimentation not only in the area of academic content, but also for personal/professional development and engaging professionally in the spirit of *Ut Prosim* (That I May Serve). This process will support students to make meaning of the experience across many learning and developmental outcomes.

EXPERIENTIAL LEARNING: BEST PRACTICE

High Impact Practices. The AAC&U Liberal Education and America's Promise identified ten "high impact" educational practices that are linked to increased rates of student success (Kuh, 2008). More than half of the high impact practices fall into the categories of experiential learning (Ayers, 2010) with undergraduate research, diversity/global learning, service learning/community-based learning, and internships most closely aligned with bridge experiences.

Other research has linked high impact practices to positive student outcomes, specifically research, internships, and service learning have been associated with increased academic knowledge, student retention, and graduation rates (Sax et al., 1999). These positive outcomes are more likely when a systematic approach to experiential learning is employed. A systematic approach intentionally engages students, promotes student interaction with peers and faculty, and provides regular opportunities for critical reflection throughout experiential learning activities (Clayton-Pedersen & Finley, 2010). While numerous benefits are attributed to high impact practices, the benefits are with the condition "if done well" (Kuh, 2008).

National Standards. The National Society for Experiential Education (NSEE) recommends standards of best practice for experiential learning. To ensure bridge experiences are likely to produce positive outcomes, we will be integrating the NSEE *Eight Principles of Good Practice for All Experiential Learning Activities* throughout the program elements. The eight principles are summarized: (1) a purposefulness to connect the experience to knowledge, (2) preparation and planning, (3) an authentic context, (4) reflection to connect experience and learning, (5) orientation and on-going training, (6) feedback loop for monitoring and continuous improvement, (7) assessment and evaluation, and (8) recognition of progress and accomplishment through culminating documentation and celebration of learning. (Source: NSEE website). The essential components of bridge experiences reflect NSEE principles.

SUPPORTING STUDENTS IN TRANSITION

Understanding student success as a process of thriving through key transitions provides a conceptual model for planning a holistic education. Perna & Thomas (2008) identify student success as a longitudinal process through transitional milestones of college readiness, enrollment, achievement, and post-college attainment. The longitudinal process serves as a helpful template for understanding the design of a degree.

FIG. 10. STUDENT TRANSITIONS ACROSS TIME

Extending the concept of student success to thriving focuses on "the quality of students' experiences in postsecondary education and the impact those experiences have on life outside and beyond" (Kinzie, 2012, p. xxv). This holistic approach considers students' full college experiences and how these experiences interface with their personal goals and experiences prior to college.

As students move into college, through college, and to the world beyond college, they are subject to many transitions. To help students successfully transition throughout their university experience, Virginia Tech has designed and implemented a wide array of research-based programming. From orientation, to first year experience, to peer mentoring, to academic support services, programs provide support to students in transition. The Bridge Experience Program will support students in their transition from achievement to post-college attainment.

RECOMMENDATIONS

A literature review of best practices for experiential learning led to the following recommendations:

- Bridge experiences need to be authentic, connected to academics, and integrated with reflection.
- The eight best practices from NSEE should be the foundation of the student experience.
- The program should build on existing strengths in early-academic transitions (First Year Experience) and focus on the transition from Virginia Tech to post-graduation destination.

PIC. 1. AUTHENTIC ACADEMIC EXPERIENCES

BRIDGE EXPERIENCE PROGRAM

OVERARCHING DESIGN PRINCIPLES

"Experience alone is a poor teacher" —Halpern & Hackel (2003)

The focus of the QEP is on student learning specific to culminating experiential learning. Embodied in the mission statement, Virginia Tech aims to be "an inclusive community of knowledge, discovery, and creativity dedicated to improving the quality of life and the human condition within the Commonwealth of Virginia and throughout the world." Experiential learning is essential to achieving this mission, because accessible, inclusive experiential learning experiences can be transformative when designed to enrich the disciplinary knowledge and skills of a program of study. Degree-embedded experiential learning was identified through strategic planning with a target of 50% of degree programs by 2026. To iteratively develop and implement the Bridge Experience Program in support of the university strategic plan, the following guiding principles were used.

Principle 1: Evidence-based. Program components and design will be informed by the educational research of experiential learning and what the research has demonstrated as the measured outcomes of student participation. We will begin with baseline student data and seek to understand barriers to participation. Throughout implementation, we will review assessment and program data to make evidence-based adjustments.

Principle 2: Build from the bright spots. We will recognize and respect the good work being done and will find ways to build on successes to elevate best practices and to make participation inclusive. Currently, Virginia Tech has degrees with an experiential learning requirement. We will learn from each other about best practices for successfully integrating experiential learning into degrees within the context of Virginia Tech. We will leverage the existing support networks and build additional support with the needed infrastructure in place.

Principle 3: Accessible and inclusive. Programs, curricula, and opportunities will be designed with the student in mind. We recognize that equity, accessibility, and diversity are among the critical needs that must be addressed as part of this effort. We must enable all students, regardless of personal resources, academic discipline, geography, or existing social networks, to develop the skills and knowledge necessary for transitioning into professional contexts. Inclusive design will require customized supports for student participation in quality experiences.

CHARACTERISTICS AND OUTCOMES

BRIDGE EXPERIENCE: CHARACTERISTICS AND TYPES

The Faculty Advisory Committee identified key characteristics of bridge experiences including

- a clear purpose and intentional learning outcomes for the student;
- an immersive, transformational experience that will serve as a bridge between the student's academic experience and future employment in the professional world;
- student agency as opposed to an experience that is mainly orchestrated by a faculty or staff member through a course or other program;

- a supervisor and/or faculty member that the student is accountable to and who can serve as a resource and mentor for the student during the experience;
- a prolonged experience spanning a semester or more that includes preparation and an orientation for the students, support throughout the experience, reflection components, and a concluding session; and
- an opportunity for students to publicly present about their learning and transformation.

Experiential learning opportunities employed in the program of study should be an intentional, evidence-based decision decided locally by the faculty with direct understanding of the curriculum and students' post-graduation plans. Although the learning will differ by the disciplinary content applied to an experience, research has shown the following experiential learning opportunities are effective tools for students to apply their disciplinary knowledge and skills in real-world settings. The overarching benefits of each type of experience are summarized.

Undergraduate research. Research experiences are relevant for students in all disciplines inclusive of creative products in the arts. With strong support from the National Science Foundation and the research community, student learning benefits of undergraduate research include gaining experience with the research process, enhancing disciplinary knowledge, discovering new interests, preparing for graduate school, and developing relationships with faculty mentors (Ishiyama, 2002).

Internships. Internships (called field studies in some colleges) provide students with direct experience in a work setting, usually related to their career interests, to give them the benefit of supervision and coaching from professionals in the field (from AAC&U). Empirical research has demonstrated a connection between internships and positive academic outcomes including greater senior-year exam scores; the positive outcomes were demonstrated by students from diverse backgrounds across diverse majors (Binder et al., 2015). Internship participation has been shown to improve student disciplinary learning and to clarify students' post-graduation goals (Gilbert et al., 2014).

Study abroad. Studying abroad provides students educational opportunities outside the US that might include field research, internship programs, field schools, as well as study at an overseas branch campus (from the Forum on Education Abroad). The long-term benefits to students who study abroad are confidence, maturity, and empathy. Study abroad has been shown to develop student understanding that their world view is not universally shared, demonstrating an awareness of cultures other than their own, and realizing the importance of human diversity (Gray et al., 2002).

Service learning. Service learning involves students performing a sustained task in the community and reflecting on the service from multiple perspectives. Service learning addresses community-based issue(s) ranging from homelessness to pollution (from Loretto, 2011). "Service learning is perhaps most recognized as helping students make connections between real-life experiences and classroom content" (Johnson & Stage, 2018, p. 7).

Customized experiences. Other experiences can occur in many forms to connect disciplinary knowledge to experience. Some of the more common types of customized experiential learning in disciplines include the following (from Loretto, 2011 and Northern Illinois FDIDC, 2018).

Apprenticeship experiences. Students take on a job role in the field with an experienced professional acting as a mentor. Apprenticeships may lead to a certificate or can be organized within a large organization or employer.

Clinical experiences. Experiences can be tied to practice in an area of study such as pre-med students participating in a hospital-based experience or teacher education students participating in classroom settings.

Cooperative education experiences (co-ops). Co-ops are more extensive than internships and are usually longer in duration. Co-ops are often more structured, integrated programs specific to students' career goals.

Field work experiences. Students explore and apply classroom learning in an authentic context. Field work can serve to bridge educational experiences with the outside community and can range from public health education in the community, to anthropological digs, to work in a laboratory.

Competitions. Students are challenged to apply their skills to develop a product, solve a problem, as well as deliver an idea or talk. Often students work in teams throughout the competition.

Faculty will consider which experiences meet the learning goals for students in their program. Students and faculty may work together to develop creative and innovative bridge experiences to prepare students to address complex problems and issues.

PROGRAM OUTCOMES: LEARNING AND PARTICIPATION

Degree-embedded bridge experiences hold the promise of supporting Virginia Tech students in persisting and thriving in their fields of study. Expectations for student learning and success are framed in the learning sciences literature to maximize programmatic benefits for students. Across bridge experience types, several student outcomes emerge including transfer of skills and knowledge through application, development of professional identity, and connection to the community.

Transfer through applied practice. The application of learning facilitates the development of essential skills and habits of mind and facilitates integration of curricular and co-curricular learning when combined with experience. Students will be expected to apply their learning in complex, real-world contexts. Designing curricula with opportunities for students to develop and apply their skills is informed by research on cognition.

Transfer, the application of skills and knowledge from one context to another, is often described as the main goal of formal education (Ambrose et al., 2010; Halpern & Hackel, 2003). Despite this central goal, however, "research has indicated that transfer across contexts is especially difficult when a subject is taught only in a single context rather than in multiple contexts (Bjork & Richardson-Klavhen, 1989)" (as cited in Bransford et al., 2000, p. 62). This context dependence accounts for why students do not think to apply or, in some cases, know how to apply the knowledge and skills in settings outside of that context. Transfer failure may also occur when learners do not understand why certain knowledge, skills, or practices are necessary (i.e., they understand what but not why).

Effective bridge experience learning elements must be thoughtfully developed to ensure students' effective transfer of information and skills. As Schwartz et al. (1999) explain, learners perform better at transfer when they can integrate particular experiences in specific contexts with abstract knowledge that spans contexts. Bridge experiences provide an effective means of applying knowledge and skills for transfer. When designing curriculum, faculty will consider how foundational concepts and skills are applied in experiences.

However, designing educational experiences that encourage transfer is not enough, or as Halpern & Hackel (2003) phrase it, "experience alone is a poor teacher" (p. 40). Bransford et al. (2000) stress that

transfer should be viewed "as a dynamic process that requires learners to actively choose and evaluate strategies, consider resources, and receive feedback" (p. 66). As such, a successful experience would incorporate two additional elements: metacognition and feedback. Metacognition is the process of reflecting on and directing one's own thinking and is a vital element to transfer and self-regulated learning. Metacognition asks learners not only to evaluate a task, but to evaluate their own knowledge and skills and plan accordingly. Likewise, feedback plays a vital role in a successful transfer experience. Feedback needs to be systematic and appropriately timed to scaffold students through their learning experiences. In authentic learning environments, feedback should ask learners to consider consequences (Halpern & Hackel, 2003). Thus, from a cognitive perspective, a bridge experience needs to be carefully structured to incorporate elements of metacognition and systematic feedback for learners to enhance their transfer of knowledge and skills to new contexts.

Professional identity formation. Focusing on skills and knowledge alone is insufficient to prepare Virginia Tech graduates to successfully transition to their next step, whether it be a career or an advanced degree. Acknowledging and providing support for students becoming professionals is a critical component of an education that prepares students for a successful post-graduation transition.

Researchers of professional education cite the theory-practice gap in many academic programs as a barrier to students thinking as, acting as, or being a professional (Dall'Alba, 2009; Cruess et al., 2014). They believe a process of internalization must occur where a student comes to "think, act, and feel" like a professional while acknowledging this transformational process is unique to each individual. In a review of the literature, Trede et al. (2012) found that for identity development to occur, learning must be directly connected to practice. Bridge experiences address the theory-practice gap and facilitate the professional identity development of students.

***Ut Prosim* (That I May Serve)**. It is in the spirit of service that we ask Virginia Tech students and graduates to engage with others, in communities, and in their chosen fields in ways that leave a positive and lasting legacy. When service is integrated within disciplinary experiences, students report deeper understanding of academic content, greater connection between academics and experience, and greater personal efficacy (Astin et al., 2000). In essence, a service mindset does not operate in isolation but enhances development in other student learning outcomes.

Bridge Experience Program outcomes. The success of the Bridge Experience Program will be measured by its ability to successfully launch the first five years of a university strategic initiative with a focus on increased participation and enhanced quality. Quality indicators will be guided and measured based on the theoretical framework of learning through experience. To successfully support our students as they bridge to their plans after graduation, we expect them to connect their experience to academic concepts, to develop personally and professionally, and to view their work and contributions in the spirit of *Ut Prosim* (That I May Serve). Review of learning theory and best practices led us to the following student learning and participation outcomes.

Learning Outcomes. Students engaging in a bridge experience will be able to:

- apply and connect their learning across academic and professional settings;
- demonstrate professional self-awareness by articulating their personal and professional development; and
- demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and their field.

Participation Outcome. To achieve a successful launch of the university strategic initiative, we will meet or surpass our 5-year milestone: 50% of undergraduate academic degrees have a required, transcriptable bridge experience component by 2026.

PROGRAM DEVELOPMENT

KEY ENHANCEMENTS

In the topic identification and program development process, three main barriers to participation were identified: curriculum, communication, and cost. The Bridge Experience Program will address these barriers with key enhancements to processes, procedures, and support structures.

Embedding curriculum requirement. Adding bridge experiences to the curriculum will be addressed locally at the department and program level to ensure the requirement is possible for students and does not increase time to degree. Integrating bridge experiences requires flexibility in approaches across departments and colleges. Departmental faculty, aware of students' engagement by type of experience, time of year of experience, and location of experience, can thoughtfully plan curricular structures that will guide students through the best practice experiential learning process while being mindful of the implications of curricular and credit decisions on student cost and time to degree. Virginia Tech academic programs are different in size. The curricular decisions made in smaller-sized programs will be different than those in programs with thousands of students. Although the designs will be customized to the unique departmental characteristics, the goal for all academic programs will be the same: to integrate a required bridge experience into the degree that appears on the student's academic transcript without extending time to degree.

Enhancing communication. The means by which students learn (or fail to learn) about experiential learning opportunities is inconsistent. Some departments have exemplary communication structures to inform students about experiential learning and connect them to experiences. Building from these bright spots, we will develop resources to support best practices across departments and colleges. To address this barrier, the Bridge Experience Program will plan and implement both local and central communications including the following action items.

Technology-enhanced communication. Local, enhanced communication will include the best practices known to be effective: website development, departmental listservs, and strategic email from deans and department heads. As part of the cohort roll-out, departments will develop and will implement a communication plan inclusive of technology-enhanced communications. At the university level, in addition to the existing use of Handshake, the Bridge Experience Program will be implementing a centralized technology infrastructure that will both bring in new opportunity listings and will allow departments to curate opportunity lists that are most suited to their students and their bridge experience requirement.

Early, course-based communication. We learned from the pilot departments that different students require different levels of communication support. One departmental report described the "go-getters" as the students who actively seek experiential opportunities early in their plans of study and connect with faculty and resources. The "go-getters" use existing technology sources to their advantage. Departments recognized the need to intentionally and systematically reach out to all students through early, course-based communications. This communication may be early outreach in First Year Experience courses (Note: our FYE courses are disciplinary, and housed in colleges and departments), engagement in a career-support course, or another course-based approach the faculty feel is an effective communication

point. In their communication plan, departments will indicate how they will integrate early, course-based communication about experiential learning.

Career and internship fairs. In colleges with the greatest level of paid opportunities, those colleges (and in some cases, departments) offer career fairs directly linking their students with internships and other experiential opportunities. The Bridge Experience Program will collaborate with Career and Professional Development for increasing interdisciplinary career fairs to connect students from across disciplines and departments to opportunities in specific sectors or regions. For example, the Commonwealth Cyber Initiative is offering a Cybersecurity Career Fair to students. We will use this as a model for career fairs connected to government positions (national, state, and local) as well as other sector-specific fairs. Also, we will explore the possibility of regional opportunity fairs for summer experiences. Throughout the past year, Virginia Tech developed increased capability with offering remote career fairs. Technology will be leveraged to increase the use of remote career fairs to connect students with opportunities.

Addressing cost. Perhaps the most challenging barrier for the Bridge Experience Program is the differential costs associated with some experiences. Although we researched other university programs providing universal funding for experiential learning (e.g. providing all students with $1,000 experiential learning funds), a one-size-fits-all model would not be an equitable or sustainable solution at Virginia Tech. In three of the colleges (including two of the largest colleges), a large percentage of internships in which students are engaged are paid opportunities. In other colleges, the number of paid opportunities is much less. Another key cost factor is the time of year in which students participate. For students who can engage in local opportunities during the academic year, the costs are much less than costs for students who may participate in a summer experience with associated housing costs. While we will not be able to address all cost barriers with programmatic enhancements, we are planning the following changes to offer more low-cost options and to increase the number of paid opportunities.

On-campus internship and Federal Work-Study programs. Managed by Career and Professional Development, the on-campus internship program will be implemented in fall 2021. The program will work with offices and departments on campus and in the local community to transform some work study and other jobs to career-connected internships. Virginia Tech is a pilot university for the Federal Work-Study Experiment aiming to expand the earn-and-learn opportunities for students by removing barriers to off-campus jobs, allowing students to work more hours, and permitting institutions to pay students for work-based learning such as apprenticeships, externships, and clinical rotations.

Centralized support for external learning partnerships. Some academic departments have their own coordinator for outreach and external learning partnerships. This coordinator seeks partners with learning opportunities (and often paid opportunities) and brings partners together for recruiting events and job fairs. Smaller departments will have the support of a new external learning partnership coordinator that will help organize and seek new opportunities.

Early notification and planning. A cost and communication challenge, students said if they knew about an experience earlier, they could plan to save money toward the cost of the experience. The program will work to create greater transparency around the costs of experiential learning opportunities for earlier planning.

PILOT

The pre-implementation year (year 0) was used as a pilot to further refine the program elements. Starting with a retreat in May 2020, Chemistry, Political Science, and Sociology were brought on to embed bridge experiences for their students. As the pilot cohort, the three design teams used draft guidance from the

faculty committees. Feedback from the pilot faculty was instrumental in planning the proposed action items, program support, and final operationalization of the program elements.

The cohort model of implementation was reaffirmed with the newly formed Academy for Experiential Learning staff providing professional development and support through retreats and planning meetings. In addition, the department leads shared how helpful it was to connect with colleagues to problem solve and to discover approaches that were working in other colleges and departments. The cohort-based roll-out model will be used with multiple departments engaging in planning and sharing of ideas as a community. The spring 2021 cohort includes multiple departments from the College of Engineering. With the large size of the college, engineering faculty are planning to pilot a system of planning and reflection through their Engineering Education department that will scale to both track and to enrich student experiences without burdening individual departments with designing and developing their own systems.

Recommendations. From working with the pilot departments, the following needs were identified:

- identify what is unique about students who are not participating in bridge experiences;
- generalize approaches to address common problems of early communication and support;
- customize solutions by discipline to address the unique challenges in their field; and,
- clearly communicate with students with both professional and student-created content.

PLANNING SCENARIOS

Informed by the pilot, three planning scenarios were identified with unique characteristics and student needs. These overarching designs informed the development of the Bridge Experience Program and the support structures that are provided to participating departments.

High participation and low learning. This scenario is characteristic of colleges and departments with a majority of the student body participating in paid internships. Examples include the Colleges of Business, Architecture and Urban Studies, and Engineering. While these colleges have often greater than 80% participation in paid internships, there is limited tracking of learning quality during the experience. The primary need is facilitated learning for quality experiences at scale.

Low participation and high learning. This scenario is characteristic of colleges and departments with few students participating in experiential leaning, but participating students are closely mentored by faculty. An example includes the College of Liberal Arts and Human Sciences. With much less participation than the colleges in the previous scenario, students often work one-on-one with faculty while doing undergraduate research or independent studies. The primary need is scaling opportunities, especially paid opportunities, to ensure parity in access across disciplines.

Participation in a single experience type. This scenario is characteristic of colleges and departments with participation in a single type of experience and is exemplified in the laboratory sciences where many students do undergraduate research but most students intend to pursue employment and not continuing education. Participation and tracking of learning quality are high for the single experience type. The primary need is identifying and scaling different types of opportunities appropriate for student post-graduation plans while facilitating learning quality.

PROGRAM IMPLEMENTATION

The Bridge Experience Program was built based on existing frameworks known to be successful in undergraduate education at Virginia Tech. These frameworks were used by the previous QEP, which

continues today, the general education program, and the Howard Hughes Medical Institute Inclusive Excellence program. A structured, four-semester process was developed for departments to systematically identify needs, plan and address critical components for success, assess learning, and implement a degree-embedded bridge experience requirement. Departments will be supported by the Academy for Experiential Learning through a structured, four-semester design process that was informed by the pilot departments and other programs at Virginia Tech. The overarching goal of each semester is outlined in Fig. 11 with details following.

FIG. 11. OUTLINE OF FOUR-SEMESTER PROCESS TO IMPLEMENT DEGREE-EMBEDDED BRIDGE EXPERIENCES

Semester 1: Environmental scan. The purpose of semester 1 is to understand student experience and participation in experiential learning to build a data-driven baseline to inform further action. Highlights of this semester include

- attend an onboarding retreat for professional development;
- perform an environmental scan to identify gaps in student participation;
- identify needs for the types of bridge experiences that best prepare individual students; and
- identify other stakeholders who need to be involved throughout the process.

Semester 2: Planning. The purpose of semester 2 is to develop a holistic plan for implementing bridge experiences in the curriculum by building on what was learned in semester 1. Highlights of this semester include

- identify needed curricular changes;
- develop a communication plan for informing students about bridge experiences; and
- plan needed changes for administrative processes, academic advising, and connecting students with opportunities.

Semester 3: Implement and assess. The purpose of semester 3 is to begin implementing the plans developed in the previous semester. Highlights of this semester include

- implement plans around the core areas of communication, advising, administration, and opportunity needs;
- identify targets and tracking progress; and
- assess the quality of student learning and tracking participation.

Semester 4: Continued implementation and governance. The purpose of semester 4 is to learn and expand on the progress in the previous semester and to implement curricular change. Highlights of this semester include

- reflect on lessons learned from semester 3 and revising plans;
- continue implementation of the core areas and assessment; and
- work through curricular revision, and necessary governance, to incorporate bridge experiences into degree requirements for all students.

Throughout the four semesters, design teams will be supported by the academy through monthly community of practice meetings and regular collaborative working sessions within each cohort. Department and college leadership will be involved to ensure buy-in and to identify college-level resources and structures needed for full implementation. Administratively, team leaders will attend monthly update meetings and will submit semester-based progress reports to ensure departments are on track for on-time governance and progress towards the strategic milestone.

A grant proposal model will support start-up and ongoing costs and is familiar to faculty though the existing First Year Experience and general education programs. A request for proposals (see Appendix F) was developed with applications reviewed after March 15 and October 15 each year. Departments selected in March begin in May, and departments selected in October begin in January.

The application is communicated broadly with the university community through the VT Daily News and other targeted stakeholders including deans and department heads, faculty involved in Center for Excellence in Teaching and Learning programming, and general education instructors. In spring 2021, two information sessions were attended by 16 faculty representing diverse departments. As a result, 11 applications were received with 6 selected for the next cohort.

Each semester, a new cohort of departments start the process while existing cohorts continue to the next step in the design process resulting in an overlapping, staggered implementation (Fig. 12). At full implementation, four cohorts will exist simultaneously, one at each of the four semester benchmarks. Plans for the first three cohorts are shown below. Cohort 2 involved a team of departments within the College of Engineering who intend to work together to troubleshoot common problems and to identify college-wide solutions. This process demonstrated the importance of involving college-wide leadership, and as a result, two groups of college teams were selected in Cohort 3.

Fall 2020 **Cohort 1** (pilot departments) includes

- Chemistry;
- Sociology; and
- Political Science.

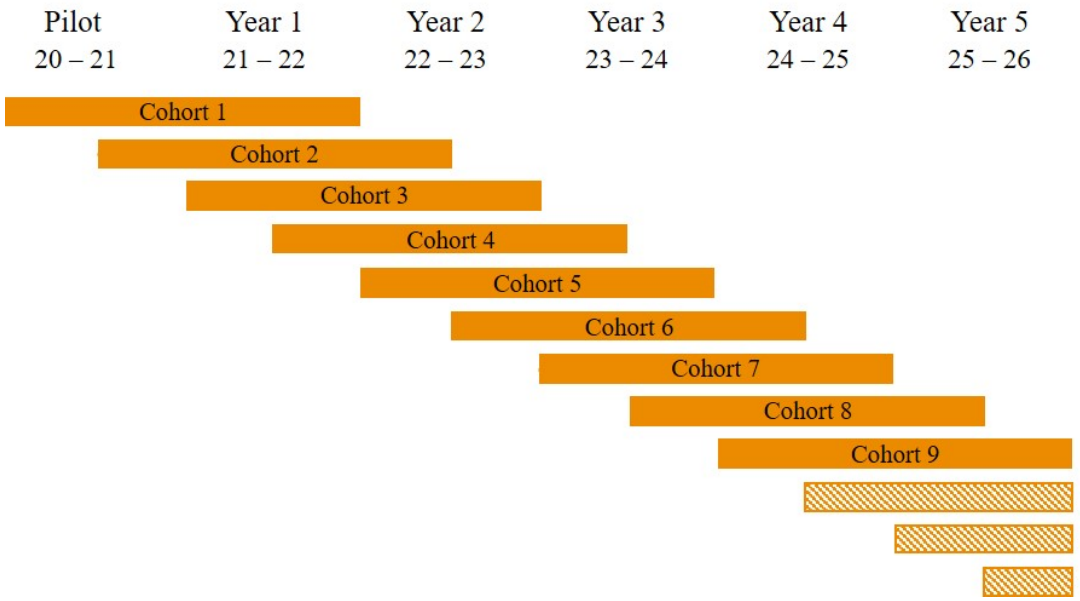
Spring 2021 **Cohort 2** includes

- Biomedical Engineering & Mechanics;
- Civil & Environmental Engineering;
- Engineering Education; and
- Industrial & Systems Engineering.

Fall 2021 **Cohort 3** includes

- College of Agriculture and Life Sciences:
    - Agricultural, Leadership, and Community Education;
    - Biochemistry; and
    - Food Science and Technology;
- College of Architecture and Urban Studies:
    - School of Architecture and Design;
    - School of Public and International Affairs; and
    - School of Visual Arts;
- English; and
- Neuroscience.

FIG. 12. TIMELINE FOR THE RECRUITMENT AND PARTICIPATION OF DEVELOPMENT COHORTS



PROGRAM TIMELINE

Virginia Tech's implementation timeline recognizes the use of a pilot year and spans from fall 2020 to spring 2026. Implementation of the plan will be monitored and adjusted through the initiative committees with regular reports to university leadership and the Board of Visitors.

TABLE 2. TIMELINE FOR IMPLEMENTATION MILESTONES FOR BRIDGE EXPERIENCES

Year	Fall	Spring
Pilot 2020 to 2021	• Cohort 1 begins • Initiate the departmental grant program • Launch the Academy for Experiential Learning • Form strategic initiative committees • Develop resources guides and assessment toolkit • Hire Project Management Specialist	• Cohort 2 begins • Explore college-wide systems for supporting curricular elements • Launch Experiential Learning Certificate Program • Develop on-campus internship and federal work study programs • Begin IT procurement process for central technology support • Pilot learning outcomes assessment • Hire Coordinator for External Partnerships Outreach and Development • Specify bridge experiences in the Partnership for an Incentive Based Budget (PIBB) • Assessment retreat to revise assessment instruments • Add questions to the senior exit survey re: barriers to participation

Year	Fall	Spring
Year 1 2021 to 2022	• Cohort 3 begins • Annual (2020 to 2021) progress report • Launch the on-campus internship and federal work study pilot programs • Develop structure and design for central technology support, pilot implementation • Plan first interdisciplinary career and internship fair	• Cohort 4 begins • Cohort 1 submits curricular revisions to governance • Pilot centralized technology system • Host interdisciplinary career and internship fair • Experiential Learning Showcase • Finalize PIBB metrics • Plan second interdisciplinary career and internship fair • Assessment committee scores samples and analyzes results
Year 2 2022 to 2023	• Cohort 5 begins • Cohort 2 submits curricular revisions to governance • Annual (2021 to 2022) progress report, adjustments recommended • Enhance centralized technology system • Implement the on-campus internship and revised federal work study programs • Host second interdisciplinary career and internship fair • Implement PIBB scorecard metrics	• Cohort 6 begins • Cohort 3 submits curricular revisions to governance • Implement centralized technology system • Spring interdisciplinary career and internship fair • Experiential Learning Showcase • Assessment committee scores samples and analyzes results • Work with colleges to hire Experiential Learning Faculty Fellows
Year 3 2023 to 2024	• Cohort 7 begins • Cohort 4 submits curricular revisions to governance • Annual (2022 to 2023) progress report, adjustments recommended • Fall interdisciplinary career and internship fair • Pilot college-level version of Cooperative Education and Internship Program (CEIP)	• Cohort 8 begins • Cohort 5 submits curricular revisions to governance • Spring interdisciplinary career and internship fair • Experiential Learning Showcase • Continue to pilot college-level version of CEIP (will also offer in summer 2024) • Assessment committee scores samples and analyzes results
Year 4 2024 to 2025	• Cohort 9 begins • Cohort 6 submits curricular revisions to governance • Annual (2023 to 2024) progress report, adjustments recommended • Fall interdisciplinary career and internship fair • Implement college-level version of CEIP (offered every semester)	• *Cohort 10 begins-not included, will finish outside QEP timeline* • Cohort 7 submits curricular revisions to governance • Spring interdisciplinary career and internship fair • Experiential Learning Showcase • CEIP implementation continues • Assessment committee scores samples and analyzes results

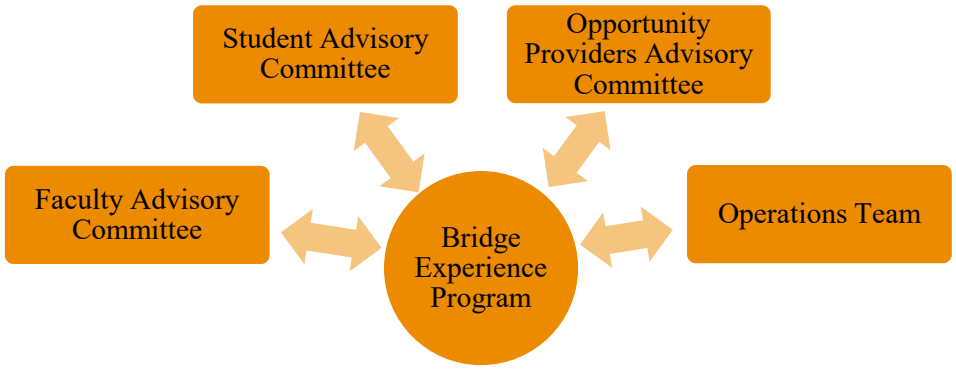
Year	Fall	Spring
Year 5 2025 to 2026	• *Cohort 11 begins-not included, will finish outside QEP timeline* • Cohort 8 submits curricular revisions to governance • Annual (2024 to 2025) progress report, adjustments recommended • Fall interdisciplinary career and internship fair • CEIP implementation continues	• *Cohort 12 begins-not included, will finish outside QEP timeline* • Cohort 9 submits curricular revisions to governance • Spring interdisciplinary career and internship fair • Experiential Learning Showcase • CEIP implementation continues • Assessment committee scores samples and analyzes results • Prepare QEP five-year report

ORGANIZATIONAL STRUCTURE

The program is being administered from the Center for Excellence in Teaching and Learning where a newly created Academy for Experiential Learning is housed to collaborate with partner offices and faculty in academic units throughout the development process. The academy serves as a hub to coordinate communications, manage development and implementation grants, provide assessment development and support, and develop and implement programming and communities of practice to support bridge experiences design.

A number of stakeholder groups continue to inform the program throughout implementation including faculty, students, administrative units, and external partners. All of the working groups are formed and have been meeting in 2020.

FIG. 13. LEADERSHIP STRUCTURE FOR THE BRIDGE EXPERIENCE PROGRAM



FACULTY ADVISORY COMMITTEE

The Faculty Advisory Committee is a Faculty Senate-nominated working group. The committee provides frameworks, guiding documents, and structures to support the work of academic departments implementing degree-embedded experiential learning and acts as a liaison to Faculty Senate. The committee collaborates with the other bridge experience committees as well as college and department leadership, as appropriate.

Members (see Appendix A) are nominated by faculty senators for their experience developing programs and working with students in undergraduate research, study abroad, service learning, field work, clinical work, or apprenticeships. Nominees are selected by the committee chair based on nominee interest and needs of the committee to represent a wide range of experience in different areas of study. The chairperson will rotate annually and is determined by committee vote. This committee meets bimonthly.

STUDENT ADVISORY COMMITTEE

The Student Advisory Committee provides the student perspective on bridge experience opportunities. The committee is focused on strategies for all students to have access to, and made aware of, the experiential learning opportunities at Virginia Tech. Members of the Student Advisory Committee (see Appendix A) are selected through nominations from key student organizations at Virginia Tech, including the Student Government Association. Campus partner offices nominate students who were active on their advisory boards or in their units. A chair is selected through a vote from current members. The Director of the Academy for Experiential Learning is the advisor to the committee. This committee meets monthly.

OPPORTUNITY PROVIDERS ADVISORY COMMITTEE

The Opportunity Providers Advisory Committee is a connection between those environments in which our students are engaged in experiential learning and the academic departments. Members offer expertise and provide clarity on existing and new experiential learning opportunities on the Virginia Tech campus, in surrounding communities, and from other sources for site-based experiences.

Members of the Opportunity Providers Advisory Committee (see Appendix A) are identified by research institutes at Virginia Tech, Dean's Advisory Councils, Extension, and other organizations that may seem appropriate as the committee grows and develops. Members serve a 2-year term. The committee chair is nominated and selected by vote annually. This committee meets monthly.

OPERATIONS TEAM

The goal of the Operations Team is to use varied expertise across operational areas of the university to aid in the implementation of the strategic goal. These areas range from Office of Undergraduate Research to Financial Aid Office to Inclusion and Diversity. Members (see Appendix A) work together using creative problem solving to proactively plan for the infrastructure and support needs of departments embedding bridge experiences into their curricula. Members are identified by divisional leadership. This committee meets monthly.

RESOURCES

To successfully launch a university-wide initiative with the scope to ultimately affect curricular change in all undergraduate degree programs, the university is committed to sustaining existing and implementing new human and financial resources. Financial support includes staffing, internal grants, faculty fellows, student showcase, and technology infrastructure inclusive of an enterprise system for opportunities and assessment management.

Using evidenced-based planning, we will adapt our plans and resources to develop support structures for long-term success. New resources are being invested to complement existing experiential learning support across campus.

GROUPS INFORMING RESOURCE NEEDS

A number of groups were instrumental in identifying resource needs to make the Bridge Experience Program successful. The Beyond Boundaries Experiential Learning Committee recommended creating an umbrella organization to house experiential learning activities, which ultimately led to the Academy for Experiential Learning. The External Learning Partnership Task Force identified a clear need for more common institutional processes, which led to investments in infrastructure. The students in PR 3144 emphasized the need for more on-campus and academic year opportunities, which led to the proposal for a structured on-campus internship program. The pilot departments emphasized resource needs around personnel and the value of sharing ideas across academic units, and the pilot informed the structure of department grants, faculty fellows, and the community of practice. The previously identified standing committees and participating departments continue to inform resource needs, and feedback will be used to adjust resources as the program progresses.

EXISTING AND ENHANCED RESOURCES

To implement the Bridge Experience Program, Virginia Tech will leverage a number of existing resources and build on existing strengths in experiential learning. For the degree-embedded aspect of the Bridge Experience Program, existing systems and infrastructure will be leveraged to enroll students in transcriptable bridge experiences. The current budget model is aligned with strategic planning, and metrics related to bridge experiences can be incorporated into that existing model. In addition, a number of offices across campus specialize in areas of experiential learning and are essential partners for the program.

TRACKING BRIDGE EXPERIENCES

Throughout the program development process, we researched methods used at other institutions for tracking, credentialing, and funding experiential learning initiatives. Approaches ranged from co-curricular transcripts to e-portfolios to badging. These strategies did not provide a solution to three of our greatest support concerns: how to account for faculty effort and workload to supervise experiences, how to account for course equivalencies to inform personnel needs in colleges, and how to feature bridge experiences prominently for student interest and enrollment. Instead, we looked to Virginia Tech's First Year Experience program for strategies to support implementation and sustainability. We decided to use Virginia Tech's existing timetable and checksheet systems with bridge experiences embedded in degrees. Bridge experiences will be viewed and managed using existing course numbers and variable credits. One successful strategy in some departments is designating a faculty-specific course registration number for

experiential learning indicating the faculty of record for students engaged with them in mentored experiences. We will employ this system throughout the program roll-out.

PARTNERSHIP FOR AN INCENTIVE-BASED BUDGET

The Partnership for an Incentive-Based Budget (PIBB) is a budget approach designed to incentivize the alignment of the efforts of individuals and colleges with the strategic goals of the university. College budgets are established through assignment of values to performance measures in two broad categories: unit allocations and scorecard allocations. Unit allocations are associated with overall revenue generation with additional incentives for certain high priority types of instructional, research, or fundraising activities. Examples of unit allocation metrics include student credit hours, enrolled majors, and research expenditures. Scorecard allocations are aligned with the university's major strategic goals and comprise 32% of a college's budget. Examples include in-college graduation rates and graduation disparity for underrepresented minority and underserved students. The Provost meets annually with academic college leadership to review performance across all metrics and to set goals for the coming year. Budgets are adjusted to incentivize overall performance. This process aligns resource allocation with ongoing evaluation of performance on university strategic goals.

Embedding bridge experiences in curricula will be incorporated into the scorecard allocations for each college. Deans will establish their goal for participation as the basis for annual evaluation. The Strategic Planning dashboard in the University DataCommons will document progress per college and at the university.

CAMPUS PARTNERS

Existing resources. Several offices and individuals at Virginia Tech are engaged in the support of experiential learning. The purpose of the Academy for Experiential Learning is to support faculty to develop and to implement bridge experiences appropriate to student development and student learning in the program of study. The academy does not seek to replace the work experiential learning offices do with students; in fact, for the program to be successful, the academy must collaborate with those veteran individuals with expertise in experiential learning. The areas listed below, with their respective mission/goal statements, are not inclusive of all of the experiential learning support at Virginia Tech, but demonstrate the offices and people who will be key partners for the academy faculty. These offices represent existing capability to support the Bridge Experience Program.

Office of Undergraduate Research. The mission of the Office of Undergraduate Research is to promote, enhance, and expand undergraduate research opportunities at Virginia Tech. The office serves the Virginia Tech community by facilitating the engagement of undergraduates in authentic research experiences in all areas of scholarship, especially those mentored by Virginia Tech faculty. The office offers services and support to enhance the undergraduate research experience by helping students find research opportunities, promoting dissemination of student research, providing data and programmatic support for grant-sponsored undergraduate research programs, and ensuring compliance with university and federal regulations and policies.

Career and Professional Development. The vision of Career and Professional Development is to empower students to discover and to pursue a path to a fulfilling career; so, they can make their own unique marks on the world. Recognizing that career development is a life-long process, the mission is to educate and to support students as they explore and further understand themselves and career options, gain valuable experience, develop as professionals, and launch their post-graduation career plans. Career and Professional Development works with all Virginia Tech students: all majors; all academic levels, first-

year through graduate level; all career topics. Advisors help students explore career options, seek many kinds of experiences including internships and co-ops, seek post-graduation employment, and plan for graduate or professional school.

VT Engage. The VT Engage vision is to inspire active citizens and strengthen communities with the mission to collaborate with communities, students, and faculty to cultivate sustainable, mutually beneficial partnerships through engaged service, learning, and reflection. The core values are authentic community partnership, awareness of civic and self-identity, development of active citizens, and responsible action grounded in scholarship.

Global Education Office. The Global Education Office strengthens Virginia Tech's mission of global engagement, discovery, and service by connecting our faculty and students to their peers abroad; inspiring and contributing to the faculty's creation and promotion of cross-cultural learning experiences; and supporting the development of our students into globally competent citizens The office offers scholarship opportunities, information on safety abroad, mentors, as well as information about abroad opportunities for faculty, students, and parents.

Colleges and academic departments. Many colleges and academic departments allocate faculty and staffing to support experiential learning, and existing curricula have experiential learning requirements. Additionally, departments enhance student professional identity formation and engagement through societies and clubs, mentoring, and industry connections.

Enhanced resources. In addition, several new programs within the partner offices were identified as key elements of the Bridge Experience Program. Specifically, Career and Professional Development is beginning two programs that will be vital to program success.

On-campus internships. The on-campus internship program is in development and is scheduled to be piloted in fall 2021. The program will work with offices and departments on campus and in the local community to transform some work study and other jobs to career-connected internships. With Virginia Tech being one of the largest employers in the region, the implementation of a centralized internship program will offer bridge experiences in a wide range of areas from accounting to event management to sports communication. This enhancement will allow the university to increase the capacity of paid internships available during the academic year. Resources for this program are coming from redefining position responsibilities within Career and Professional Development.

Federal Work Study Experiment. Virginia Tech is a pilot university for the Federal Work-Study Experiment under the U.S. Department of Education's Experimental Sites Initiative, an initiative which expands earn-and-learn opportunities for students by removing barriers to off-campus jobs, allowing students to work more hours, and permitting institutions to pay students for work-based learning such as apprenticeships, externships, and clinical rotations. Virginia Tech is partnering with local employers to provide increased opportunity for paid internships throughout the academic year. This program is supported by redefining position responsibilities within Career and Professional Development.

NEW RESOURCES

New resources are being invested in infrastructure for the Academy for Experiential Learning and technology needs. The Academy for Experiential learning is a new unit within the Center for Excellence in Teaching and Learning and is designed to support the Bridge Experience Program. The new academy Director will build faculty teams and communities of practice. Launched in 2020, the academy is

empowering faculty to reimagine curricula and champion experiential learning efforts for their students in programs, departments, colleges, and the institution.

The academy leverages existing support structures of the Center for Excellence in Teaching and Learning which, with customization to experiential learning, can provide a comprehensive system for supporting faculty with the knowledge, skills, and tools they need to develop deep and meaningful experiential learning opportunities and to embed them in students' plans of study.

The academy supports the Bridge Experience Program through new positions supporting curriculum design, professional development, learning outcomes assessment, and opportunity curation for students. Virginia Tech is investing in departments through a grant program, which has been successful in a number of other university initiatives. Significant investments will be made in technology to consolidate experiential learning opportunities to a single location and better connect students with the right opportunity.

ACADEMY FOR EXPERIENTIAL LEARNING

Personnel. To support the work of the initiative, three new positions were allocated: Director (2020), Project Management Specialist (2020), and Coordinator for External Learning Partnerships and Outreach (2021). Job description highlights are included below.

Director. The Director of the Academy for Experiential Learning, within the Center for Excellence in Teaching and Learning, will work with the center director to provide university-wide leadership and coordinated management of professional development focused on empowering and supporting Virginia Tech faculty to develop and integrate experiential learning into programs of study. The academy Director's responsibilities include

- providing a comprehensive system for supporting faculty with the knowledge, skills, and tools they need to develop deep and meaningful experiential learning opportunities and embed them in students' plans of study;
- designing, developing, implementing, and evaluating professional development programs focused on advancing faculty members' understanding, application, and implementation of effective learning-centered curriculum design aligned with the strategic vision for an experiential degree;
- facilitating communication and coordination with partner offices, faculty, and administrators engaged in experiential learning;
- revising, strengthening, leading, and expanding experiential learning opportunities to build capacity to enable access and equity for an experiential education for ALL graduates; and
- designing, developing, implementing and evaluating professional development activities focused on customized learning experiences to meet the career goals for students in their program.

Project Management Specialist. The Project Management Specialist will be managing activities connected to the development and implementation of the initiative focused on providing every graduate with an experience to bridge their academic learning with their professional plans after graduation. The Project Management Specialist will

- demonstrate project management skills to support the experiential learning initiative;
- have knowledge of educational approaches using real-world experiences and their role in student learning and development;
- think and act strategically with an ability to nurture and develop long-term strategic partnerships with faculty, administrators, and students;

- organize and manage data and develop reports to communicate data effectively; and
- be capable of excellent communication skills including speaking, all forms of correspondence, and writing.

Coordinator for External Learning Partnerships and Outreach. The coordinator will provide centralized services and support for external learning partnerships. The coordinator will

- manage a centralized interface for external partners and the campus community;
- maintain an active roster of external learning partnerships for Virginia Tech;
- provide outreach and training to students and faculty participating in external learning partnerships;
- facilitate the creation of new external learning partnership programs and assist in managing established external learning partnership programs; and
- develop and implement career and internship fairs connecting external learning partners with students across disciplines.

Bridge Experience Program implementation. A number of new support programs will be facilitated through the academy in support of the Bridge Experience Program. These programs serve either the faculty directly working with the academy or the Virginia Tech students who are seeking and participating in bridge experience opportunities.

Departmental start-up grants. The academy will manage and support a grant program similar to a number of other academic grants. Faculty teams submit a proposal to be considered as a cohort team. The grants are customized to provide funding for the planning elements most likely to yield learning improvements within the unique context of each department and on a timeline that provides funding when it is most needed. The university is budgeting $120,000 annually to support six to seven departmental start-up grants. These new resources were allocated in the pilot year.

Communities of practice. The departmental cohort groups will form a community of practice from a kick-off retreat to ongoing community meetings focused on key topics in experiential learning. Faculty will apply educational research findings and best practices to the design of the experiences. Throughout this process, support staff from the academy will provide resources and facilitation.

Faculty fellows. Faculty fellows in bridge experiences will serve as mentors and liaisons for faculty designing and implementing bridge experiences within their colleges. Faculty fellows understand the challenges from a faculty perspective and can help troubleshoot to find creative solutions for successful implementation of bridge experiences. Additionally, faculty fellows will provide college-level support for the bridge experience learning process by facilitating a Cooperative Education and Internship Program beginning in the third year of the Bridge Experience Program. The university is allocating new budget support for faculty fellow remuneration.

Bridge Experience Program showcase. Several years ago, the university piloted a university-wide experiential learning event. Several hundred students participated, and it was always the intent to offer an experiential learning showcase as an annual event. With new budget dedicated to supporting the event, the academy will plan and implement an annual Bridge Experience Program showcase beginning in spring 2022.

Facilitating opportunity curation. Some colleges and large departments on campus have personnel to support outreach and external learning partnerships. As recommended by the External Learning Partnership Task Force, a centralized support structure is needed to manage partnerships and to make

opportunities available to more students. In addition to supporting a centralized partnership system, coordination of partners will allow for interdisciplinary career and internship fairs to connect students from across disciplines and departments to opportunities in specific sectors or regions. Offered online, partners will not have to extend large resources to connect with Virginia Tech students. With a dedicated new position and new budget to support outreach and interdisciplinary fairs, the academy will host one fair per semester beginning in spring 2022.

Remuneration and buy-out for faculty leadership and support. Throughout the program implementation, faculty expertise will be engaged for leadership, support, and assessment efforts. New funding is allocated for these purposes with increases planned as more Faculty Fellows are engaged later in the program roll-out.

ENTERPRISE SYSTEM

In 2019, we began exploring enterprise systems to provide centralized support for experiential learning. After engaging several campus stakeholders in a vetting process, we engaged with the Student Opportunity Center in preliminary planning and asked for a scope of work. The Student Opportunity Center provides custom services and technologies to scale the operations needed to provide quality bridge experience opportunities to the entire student population in 18 to 36 months. Already implemented at several of the large public institutions in Virginia, the company has formed a group of the nation's leading experts to implement research-based best practices in unique campus environments.

The company proposes a focus in the core service areas of maintaining a technology platform and sourcing quality experiential learning opportunities. The primary goals of these services are to

- systematize and streamline Virginia Tech's experiential education operations at scale;
- establish Virginia Tech as a nationally recognized leader in experiential learning; and
- increase enrollment yield, retention, career placements, and the number of Virginia Tech students remaining in Virginia.

The proposed system has yet to go through the procurement process, and we anticipate needed modifications. With the complexity and cost of successfully implementing an enterprise system, we anticipate the system will not be fully implemented until spring 2023.

PIC. 2. SOC LOGO

BUDGET

TABLE 3. QEP PROPOSED DRAFT BUDGET FROM NEW BASE FUNDS

	Pilot	Year 1	Year 2	Year 3	Year 4	Year 5
Personnel						
Academy Director	85,000	85,000	85,000	85,000	85,000	85,000
Project Management Specialist	70,000	70,000	70,000	70,000	70,000	70,000
External Partners Outreach	65,000	65,000	65,000	65,000	65,000	65,000
Faculty Remuneration	60,000	60,000	60,000	100,000	100,000	100,000
Assessment Committee Stipends		2,500	2,500	2,500	2,500	4,000
Technology						
Enterprise system		75,000	100,000	125,000	125,000	125,000
Department Support						
Start-up grants	120,000	120,000	120,000	120,000	120,000	120,000
Program Expenses						
Virtual career fair support		1,250	2,500	2,500	2,500	2,500
Showcase expenses		10,000	20,000	20,000	20,000	20,000
Estimated New E&G Funds	400,000	488,750	525,000	590,000	590,000	591,500

ASSESSMENT

Virginia Tech has prepared a comprehensive assessment plan for the Bridge Experience Program with formative and summative assessments. The Bridge Experience Program has two main program objectives: (1) enhance the quality of student learning and (2) close participation gaps. To address the quality of student learning, an assessment plan was developed based on best practices for experiential learning where a student proposes a bridge experience, completes the activity, evaluates performance, reflects on growth, and participates in a culminating showcase. Standard university assessment instruments will be used at each stage and are aligned to the three student learning outcomes. These assessment instruments were designed to be flexible and customizable to accommodate the range of disciplines and experiences relevant to Virginia Tech students.

To address participation, direct (enrollment in specific courses) and indirect (survey data) participation measures will be tracked as early metrics. Ultimately, participation gaps will be closed by implementing bridge experience requirements in curricula. Progress towards the two objectives will be analyzed and reported on an annual timeline to all relevant stakeholders by the Project Management Specialist. Then, stakeholder feedback will be used to make ongoing program adjustments.

BEST PRACTICE FOR EXPERIENTIAL LEARNING

Measuring student learning outcomes across the diverse experiences of research, internships, service-learning, and others presents unique challenges. Therefore, the Bridge Experience Program will employ a variety of instruments, both internally and externally developed, that are grounded in experiential learning theory. The theory indicates certain outcomes are common across experiences, and those common assessment elements will be aggregated to inform the program.

The National Society for Experiential Education established eight best practices for experiential learning: intention, preparedness and planning, authenticity, reflection, orientation and training, monitoring and continuous improvement, assessment and evaluation, and acknowledgement (2013). The intention and authenticity components are key characteristics of bridge experiences. The reflection component can be further expanded by the Describe, Examine, and Articulate Learning (DEAL) Model (Ash & Clayton, 2009) to enable a deeper understanding in learning categories specific to experiential learning. Through the DEAL Model, reflection encompasses three steps involving the

1. description of experiences in an objective and detailed manner (if students create a thoughtful and detailed description of their experience, then they are more likely to create meaningfulness);
2. examination of experiences using reflection prompts by learning outcome category (students move past the simple summary in order to examine the significance of the experience); and
3. articulation of learning includes goals for future action that can be taken forward into the next experience for improved practice and refinement of learning (students improve the quality of experience and apply it in the future).

The planning, reflection, assessment and evaluation, and acknowledgement aspects were identified as effective student milestones to serve as assessment points in a scalable assessment plan for the Bridge Experience Program Virginia Tech.

ASSESSMENT PLAN

To continue the bright spots work, an Assessment Committee (see Appendix A) was formed with members from the pilot departments, Faculty Advisory Committee, a department with an existing experiential learning requirement, and staff from the Center for Excellence in Teaching and Learning and the Academy for Experiential Learning. The committee members participated in an assessment retreat during which they

- gathered and shared assessment instruments used in their classes and departments for discussion and planning;
- discussed the best practice process and agreed on instrument types for each process step,
- selected exemplary instruments from the collected materials;
- made slight modifications for alignment to the learning outcomes; and
- agreed to pilot the revised instruments in spring 2021 and reconvene at the end of the semester to analyze pilot assessment data and adjust, as needed.

The assessment committee felt the DEAL Model of critical reflection met the program's learning assessment needs, but they recommended a more common reflection mnemonic that some committee members employed in their programs:

1. Description of experiences = What?
2. Examination using prompts = So What?
3. Articulation of Learning = Now What?

With this framework, assessment instruments were further refined to assess the three student learning outcomes across different types of bridge experiences.

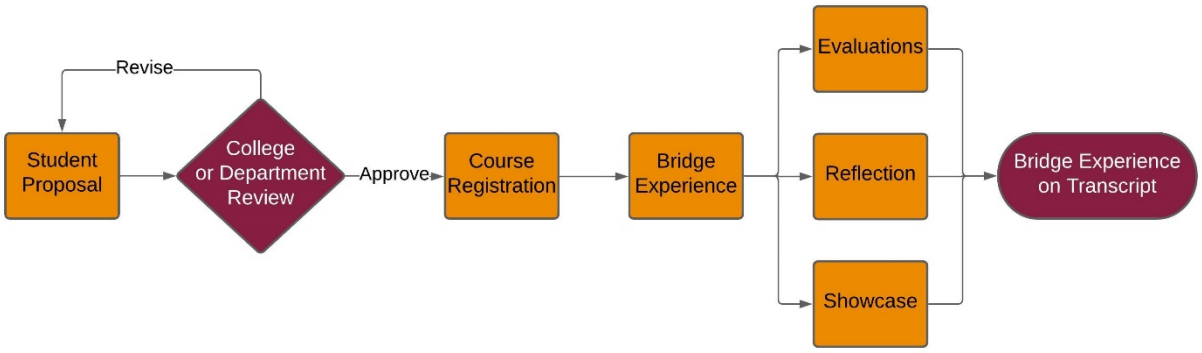
ASSESSING STUDENT LEARNING OUTCOMES

A key goal of the QEP is to enhance the quality of student learning through bridge experiences. The university will achieve its goal when assessment results show students demonstrating acceptable levels of achievement for the three program learning outcomes. Students engaging in a bridge experience will be able to

1. apply and connect their learning across academic and professional settings;
2. demonstrate professional self-awareness by articulating their personal and professional development; and
3. demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and/or their field.

To demonstrate their achievement of the program outcomes, in alignment with best practice, students will complete a process diagramed in Fig. 14. The student first submits a proposal to the academic program for approval. Once approved the student registers for the appropriate course and completes the experience. After the experience, the student completes an evaluation, reflection, and showcase while the student's supervisor also completes an evaluation. Once the bridge experience process is complete, the course appears on the student's transcript.

FIG. 14. PROCESS FOR STUDENTS TO COMPLETE BRIDGE EXPERIENCES



Proposal. Students will identify their goals and objectives for their experience (preparedness and planning) and will indicate why this experience should be considered their bridge experience (intention). Colleges or departments will develop approval processes to meet their needs and to ensure the experience satisfies the learning outcomes. A sample application for a bridge experience is in Appendix G with the corresponding rubric in Appendix H.

Evaluation. After the student has completed the experience, the student and supervisor complete the same evaluation of the student's performance (assessment and evaluation). These evaluations are based on Likert scale questions corresponding to the student learning outcomes, and an example is in Appendix I.

Reflection. Students are asked to reflect on their academic and professional growth at the end of the experience in the What?, So What?, and Now What? framework that was endorsed by the assessment committee (reflection). Reflections will be evaluated by the instructor of record using a common rubric. Sample reflection prompts are in Appendix J with an associated rubric in Appendix K.

Final product/showcase. At the conclusion of the bridge experience, students will showcase their learning in a culminating experience (acknowledgement). We envision a wide range of possible showcases such as poster sessions, presentations, publications, and performances with others added as the initiative expands. The showcase will be flexible with ample space for customization to individual student bridge experiences and could be evaluated by a number of different people including the supervisor, instructor, or others such as attendees of the bridge experience showcase or similar events. An example showcase rubric is in Appendix L with the anticipation that additional rubrics will be developed to suit more types of bridge experiences.

Assessment instruments have standard core content for university-level assessment. In addition, each of the assessment instruments can have customized content added by academic programs. This information can be used for program assessment at the academic unit level.

Measuring outcomes. The overall student learning assessment plan provides the structure for how the instruments will be used to measure the outcomes. Each student learning outcome is measured across multiple assessment instruments as shown in Fig. 15 with detailed assessment measures shown in Table 4.

FIG. 15. ASSESSMENT OF STUDENT LEARNING OUTCOMES ACROSS INSTRUMENTS

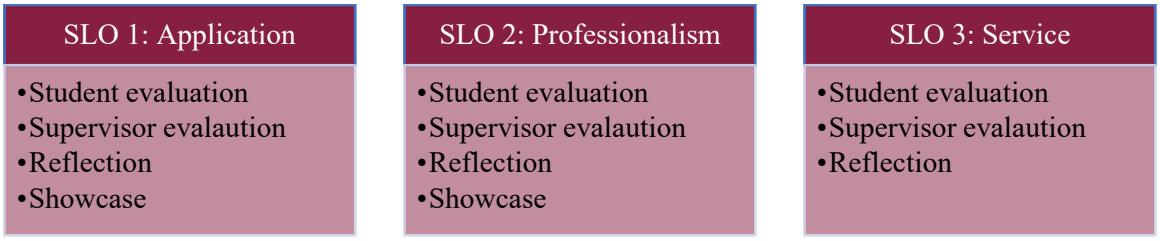


TABLE 4. MEASURES TO ASSESS STUDENT LEARNING OUTCOMES FOR BRIDGE EXPERIENCES

Student Learning Outcome	Instrument	Evaluator	Assessment
Application	Evaluation	Student	Average score for "Apply learning" section
		Supervisor	Average score for "Apply learning" section
	Reflection	Instructor	Rubric score for "Apply academics to experience" based on "Application" reflection prompt
	Showcase	Supervisor, instructor, or other as relevant	Rubric score for "Apply learning"
Professionalism	Evaluation	Student	Average score for "Professional identity" section
		Supervisor	Average score for "Professional identity" section
	Reflection	Instructor	Rubric score for "Professional self-assessment" based on the "Self-assessment" and "Now What?" reflection prompts
	Showcase	Supervisor, instructor, or other as relevant	Rubric score for "Professional identity"
Service	Evaluation	Student	Average score for "Service" section
		Supervisor	Average score for "Service" section
	Reflection	Instructor	Rubric score for "*Ut Prosim*" based on "*Ut Prosim*" reflection prompt

OTHER MEASURES OF PROGRAM SUCCESS

Participation assessment. The second overarching objective of the QEP is to close participation gaps for bridge experiences. Eventually, this objective will be met by embedding bridge experiences in degree requirements. Early in the QEP process, we will have to rely on a combination of sources to best inform participation and systematic gaps. Data will be reported by departments engaged in the initiative in their semester progress reports. Participation will be evaluated by

- student enrollment in course numbers designated as bridge experiences;

- departmental survey data; and
- exit survey data (reported annually).

With the implementation of an enterprise system to track and monitor assessment, course participation data will be reported and disaggregated by subgroups.

Participation data will be used formatively as departments analyze data to make informed changes to their bridge experiences. Participation data will also be used to summarize program effectiveness in the QEP annual reports and five-year report.

Administrative assessment. In addition to student learning outcome measures and participation measures, other outcomes will be reported annually in the administrative assessment for the academy.

Cohort departments' on-time governance. The departments participating in the Bridge Experience Program are expected to submit curricular revisions by the end of their two-year cohort window. To achieve the strategic milestone of 50% of degree programs with a bridge experience requirement, 80% of engaged departments must submit proposals to governance on time. We will monitor the on-time submission rate and adjust support as needed.

Post-graduation plans. Senior exit data will be monitored with particular attention to the percentage of students indicating they do not have post-graduation plans and their reported engagement in experiential learning activities.

Faculty support and development. The number of development activities, attendance, and attendee feedback will be recorded and analyzed to inform future development needs and indirectly measure the level and quality of support provided throughout the program.

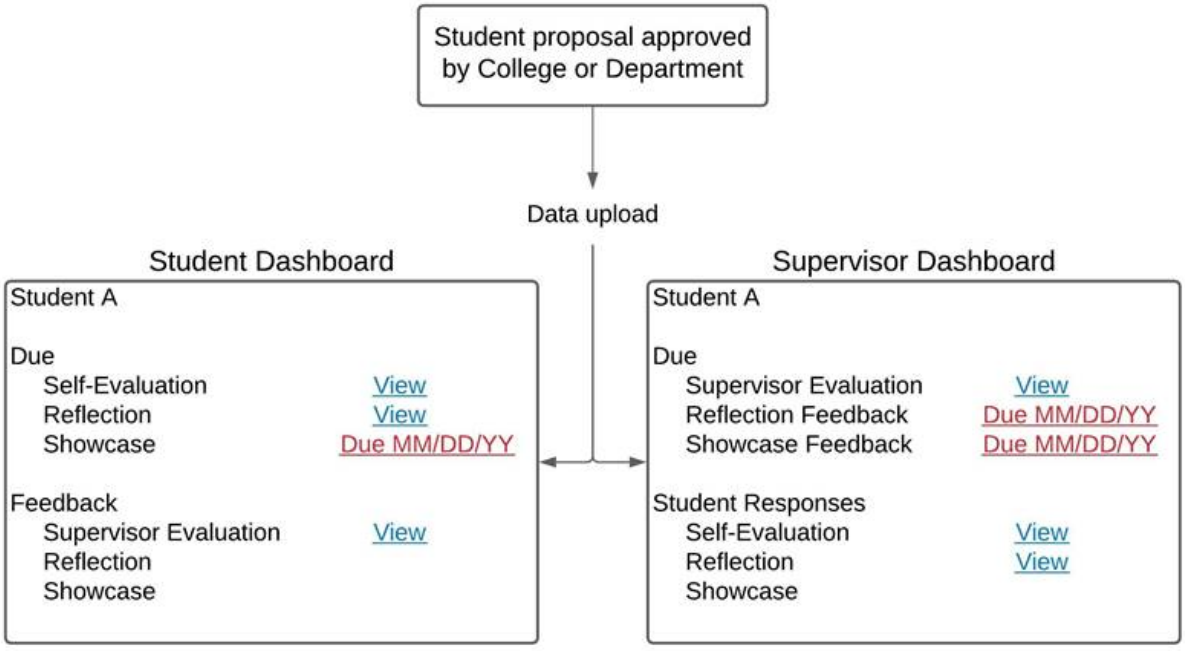
ASSESSMENT IMPLEMENTATION

ASSESSMENT CAPABILITY AND SUPPORT

After reviewing institutional data, the primary concern was the inability to objectively track participation in experiential learning resulting in the recommendation to implement a university-wide tracking system. Development and implementation of a learning artifact and assessment enterprise solution will bolster assessment capability and support. An enterprise solution will reduce workload on faculty while producing direct evidence of student participation and learning that can be disaggregated by subgroups at the university level.

The enterprise solution will prompt students to enter the appropriate content and materials at each key milestone of the bridge experience learning process. Both supervisor(s) and university-based evaluators (faculty and/or scorers) will be prompted to provide rubric-based and qualitative feedback. Via the dashboard (Fig. 16) students can monitor their progress, receive formative feedback, and verification of completion of their bridge experience requirement. Both departmental-level administrators and university-level administrators are capable of aggregating scores and artifacts for program-level summative assessment to inform continuous program improvement.

FIG. 16. ASSESSMENT USER DASHBOARDS IN ENTERPRISE SOLUTION



Assessment Committee members (see Appendix A) are responsible for developing and modifying assessment instruments, analyzing baseline data to set targets, and annually conducting a reliability check. They will then communication assessment outcomes and needs to key constituencies. For their annual analysis and reporting, committee members will receive a $500 stipend annually to recognize the time and expertise needed to perform this important task.

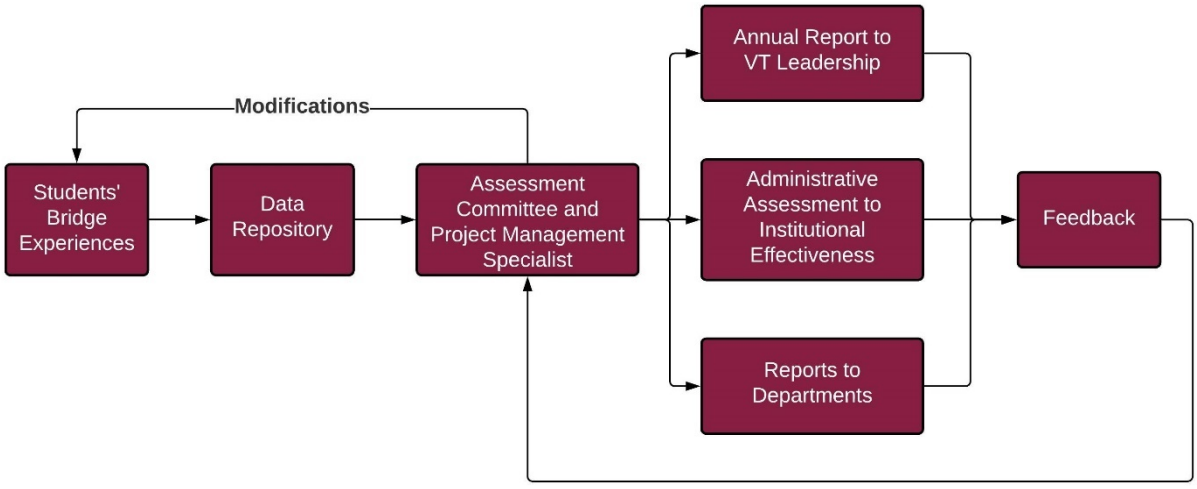
Assessment processes and reporting will be supported by the Project Management Specialist. The Specialist will set semester-based assessment timelines, communicate with departments and faculty, analyze assessment results, and provide results to the appropriate constituencies.

ASSESSMENT TIMELINE

Pilot phase. Because the proposed assessment process and instruments are not currently being used at the university level, a year will be needed to fully develop and implement both assessment instruments and workflows. For spring 2021, the assessment instruments will be piloted, reviewed by the Assessment Committee, and finalized for implementation with preliminary target metrics. For fall 2021, the assessment workflow will be piloted in the newly developing enterprise solution using the finalized instruments. Fall 2021 will serve as baseline data collection for assessing student learning. For spring 2021, the Assessment Committee will meet to review baseline data collection, adjust targets, and make any necessary modifications to the assessment instruments and workflow.

Annual assessment. Once the assessment infrastructure is in place, assessment will occur annually as diagramed in Fig. 17.

FIG. 17. ANNUAL ASSESSMENT WORKFLOW FOR BRIDGE EXPERIENCES



Students engaged in bridge experiences at various times throughout the year. The new assessment platform will be used to collect and to store data from all assessment instruments. Data will be analyzed and reported annually with primary coordination and support from the newly hired Project Management Specialist. The Assessment Committee will meet annually in the summer to perform a reliability check (panel score a randomly selected sample of artifacts and compare to faculty scores), analyze, and recommend changes based on assessment data. At this point, modifications to assessment instruments will be considered for implementation each fall. With recommendations from the Assessment Committee, the Project Management Specialist will be responsible for

- providing an annual progress report for the QEP to Virginia Tech leadership;
- completing administrative unit assessment for the Academy for Experiential Learning; and
- developing and maintaining a reporting pipeline to provide assessment of student learning and participation to individual departments to be used in improving their own programs.

Recommendations based on above reporting will be centralized by the Project Management Specialist and directed to the appropriate committee for reflection and possible program modifications. A final program report will be prepared for both SACSCOC as well as Virginia Tech's Office of Strategic Affairs to update the strategic plan milestone for Advancing Beyond Boundaries.

PIC. 3. DATA ANALYTICS

CONCLUSION AND STANDARDS SUMMARY

Experiential learning was identified as the QEP topic through visioning and strategic planning with involvement by faculty, students, alumni, and external stakeholders. The topic was refined iteratively to encompass experiential learning that intentionally connects to students' future plans and was termed bridge experiences because of the bridge between academics and career. After review of best practice and institutional data, participation and learning were identified as essential components for the Bridge Experience Program. The participation target is 50% of undergraduate degree programs with a bridge experience requirement by 2026, and quality of learning will be assessed based on three student learning outcomes by incorporating best practice for experiential learning. To accomplish these goals, departments will engage in a structured four-semester process to identify needs and to implement plans around academic advising, communicating with students, and connecting students with opportunities before ultimately creating curricular change. Throughout the process, the newly created Academy for Experiential Learning and a number of existing support offices will provide university-level support to enact this change. As the program develops, we will iteratively reflect on progress and revise to improve the program based on feedback from the operational committees representing a range of stakeholders. Virginia Tech is committed to the success of the Bridge Experience Program and is making investments in personnel, infrastructure, and a grant program for departments. The Bridge Experience Program will be a university-wide effort to ultimately implement degree-embedded experiential learning for all Virginia Tech students and has the potential to play a transformative role in developing VT-shaped students.

STANDARD 7.2A *A TOPIC IDENTIFIED THROUGH ITS ONGOING, COMPREHENSIVE PLANNING AND EVALUATION PROCESSES*

Degree-embedded experiential learning was identified through a multi-step, collaborative process that engaged multiple committees and many constituencies. The work of the Beyond Boundaries Experiential Learning Committee served as a solid foundation from which to build the operational components of the Bridge Experience Program. The topic was further elevated by the strategic planning process which engaged all of the Virginia Tech campuses and over 1000 Virginia Tech-affiliated individuals. A variety of data sources were used to select the QEP topic inclusive of national surveys, internal data analyses, and internal surveys.

STANDARD 7.2B *HAS BROAD-BASED SUPPORT OF INSTITUTIONAL CONSTITUENCIES*

Throughout the topic identification and program development process, key constituencies were engaged for both idea generation, program planning, as well as seeking feedback to inform needed changes. The summary below exemplifies the breadth of engagement and support from various program stakeholders. General feedback supported building from existing systems, acknowledged the need for more centralization, recognized the importance of experiential learning, and emphasized the need to expand opportunities for students.

Board of Visitors: In August 2019, the concept of the Bridge Experiences program was presented to the Academic, Research, and Student Affairs Committee. The committee members supported the bridge experience concept, asked questions and offered feedback. In November 2020 the QEP five-year milestone was added to strategic planning metric tracking. The Board reviewed and approved the milestone.

University Leadership: In October 2018, the initial concept and learning framework was presented to Academic Affairs Council (AAC) inclusive of the Provost, Vice Presidents, Vice Provosts, Deans, and Institute Directors. They were supportive of the framework, specifically the idea of building from the bright spots and integrating the work of the existing offices on campus rather than creating a new office. Following an August 2019 update to AAC, individual meetings were conducted with university leaders who offered committee representatives from their areas of supervision.

Other Outreach to University Leaders: In October and November of 2020, program leadership sought feedback from the Department Heads Council and University Council. Department heads' feedback for the concept of a developmental model for experiential learning was positive and Council members indicated their interest to become engaged with implementation.

Teaching and Research (T&R) Faculty: In addition to faculty involvement on all development committees and engagement with the pilot program, Faculty Senate leadership and Faculty Senate members have been integrated into the planning and implementation processes.

Administrative and Professional (AP) Faculty: AP faculty were engaged throughout the topic identification and development processes as key members of committees. The Experiential Learning Operations Team includes representation of support offices and administrative offices whose work will be critical to the operations of the initiative.

External Partners: External stakeholders engaged with the development process through individual meetings with campus leaders. Employers engaged in participatory design sessions to identify learning and skill gaps and brainstorm ideas for better connecting employers with departments. External partners continue to engage and inform the initiative through their participation in the Opportunity Providers Committee.

Students: Student representatives were involved throughout the identification and development processes. In addition to committee members, a public relations class developed communications materials and offered recommendations. The Student Advisory Committee is providing communication, branding, and outreach support.

Campus-wide Outreach: Three virtual town hall meetings were offered for campus to learn more about Bridge Experiences. Two were marketed to faculty and staff while a third was marketed to students specifically. More than 80 members of the campus community attended.

STANDARD 7.2C *FOCUSES ON IMPROVING SPECIFIC STUDENT LEARNING OUTCOMES AND/OR STUDENT SUCCESS*

Existing institutional data were analyzed to determine baseline metrics and to inform gaps in quality of students' learning and experiences. The Bridge Experience Program has two main program objectives: (1) enhance the quality of student learning and (2) close participation gaps. Student learning outcomes were developed consistent with educational research and learning theory. To ensure all students have the opportunity to engage in experiential learning, bridge experiences will be integrated in degree curricula with the goal of implementing bridge experiences in 50% of degree programs by 2026. Program implementation is guided by evidence-based principles in experiential learning design.

***STANDARD** 7.2D COMMITS RESOURCES TO INITIATE, IMPLEMENT, AND COMPLETE THE QEP*

Virginia Tech has made a substantial commitment of resources inclusive of new resources, redistributed resources, and sustainability funds. A five-year period of funding is inclusive of personnel, grants, faculty remuneration, and technology infrastructure. The university has demonstrated success using a two-year rolling grant process to sustain university learning initiatives, exemplified by the continued success of the university's previous QEP, the First Year Experience (FYE) Program. A similar grant process will support the planned QEP.

Existing systems will support colleges supplementary to grant funding inclusive of the Partnership for an Incentive-Based Budget (PIBB), Virginia Tech's budget approach designed to incentivize the alignment of the efforts of individuals and colleges with the strategic goals of the university. Embedding bridge experiences in curricula will be incorporated into the PIBB scorecard allocations for each college. The Strategic Planning dashboard in the University DataCommons will document progress per college and at the university.

Partner offices on campus currently engaged in experiential learning will use existing resources and redirected resources to support the Bridge Experience Program. A new unit, the Academy for Experiential Learning, will support faculty and other design team members as they develop, implement, assess, and sustain a high-quality student learning experience.

***STANDARD 7.2E** INCLUDES A PLAN TO ASSESS ACHIEVEMENT*

Desired outcomes are detailed with the student learning outcomes and participation outcomes for the program. Plans for summative and formative assessment and their implementation have been developed with detailed plans for an enterprise solution for artifact collection, assessment scoring, and assessment reporting. An Assessment Committee comprised of members from development teams, the Faculty Advisory Committee, and academic departments with existing experiential learning requirements serves the assessment development, implementation, and validation needs of the program. Timelines for analysis, reporting, and adjustments are developed with designated responsible personnel and support.

PIC.4. TORGERSEN BRIDGE AT VIRGINIA TECH

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APPENDICES

APPENDIX A: COMMITTEE MEMBERSHIP

BEYOND BOUNDARIES THEMATIC AREA GROUP PREPARING STUDENTS

Jill Sible (co-chair)	Professor, Biological Sciences and Associate Vice Provost for Undergraduate Education
Matt Wisnioski (co-chair)	Associate Professor, Science and Technology in Society
Stephanie Adams	Professor, Engineering Education
Kevin Carlson	Professor and Department Head, Management
Susan Clark	Associate Professor, Horticulture
Rafael Davalos	Professor, Biomedical Engineering and Mechanics
Ed Dorsa	Associate Professor, Industrial Design
Noha Elsherbiny	Graduate Student, Computer Science and Application
Juan Espinosa	Associate Director, Undergraduate Admissions
Sarah Karpanty	Associate Professor, Fish and Wildlife Conservation
Stephanie Lang	Director of Academic Programs, College of Natural Resources and Environment
Najla Mouchrek	Graduate Student, Human Centered Design
Emily Neer	Undergraduate Student, Psychology
Daniel Pierce-Parra	Undergraduate Student, Political Science
Patty Raun	Director, School of Performing Arts
Angela Simmons	Assistant Vice President for Student Affairs
Danny White	Assistant Athletics Director, Student-Athlete Development

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Jill Sible (chair)	Professor, Biological Sciences and Assistant Provost for Undergraduate Education
Amina Rahimi (co-chair)	Undergraduate Student, Biochemistry
Najla Mouchrek	Graduate Student, Human Centered Design
Margaret Archer	Extension Center Director, Excella Consulting
Amy Azano	Assistant Professor, School of Education
Lori Blanc	Director, DaVinci LLC & Assistant Professor of Practice
Nicole Easton	Admin Support, Undergraduate Academic Affairs
Marc Edwards	University Distinguished Professor, Civil and Environmental Engineering
Martha Glass	Senior Director for Assessment, Student Affairs
James Harder	Postdoctoral Fellow, Undergraduate Academic Affairs
Annie Hesp	Instructor, Foreign Languages & Literatures
Gary Kirk	Director, VT Engage
Amy Pruden	Associate Dean, Graduate School, Civil and Environmental Engineering
Danny White	Assistant Athletics Director, Student-Athlete Development

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Daniel Cockrum	Industry Contracting Manager, Office of Sponsored Programs
Kimberly Filer	Director, Center for Excellence in Teaching and Learning
Bradley Fravel	Director of Business Development, LINK
Kristina Hartman	Associate, University Legal Counsel
Robin Ott	Associate Professor of Practice, Mechanical Engineering
Eric Paterson	Rolls-Royce Commonwealth Professor of Marine Propulsion, Department Head for Aerospace and Ocean Engineering, and Interim Executive Director for the Hume Center for National Security and Technology
Donna Ratcliffe	Director, Career and Professional Development
Karen Vines	Assistant Professor, Continuing and Professional Education

FACULTY ADVISORY COMMITTEE

John Ferris (chair)	College of Engineering
Dwight Bigler	College of Liberal Arts & Human Sciences
Robert Bush	College of Natural Resources & Environment
Danille Christensen	College of Liberal Arts & Human Sciences
David Knight	College of Engineering
Amanda MacDonald	University Libraries
Donna Sedgwick	College of Liberal Arts & Human Sciences
Brian Wiersema	College of Agriculture & Life Sciences
Cynthia Wood	College of Agriculture & Life Sciences
Scott Pleasant	VA-MD College of Veterinary Medicine
Ex-Officio: Vicki Pitstick, Kim Filer	Center for Excellence in Teaching and Learning

STUDENT ADVISORY COMMITTEE

Kimberly Ikediobi (chair) 2nd year	Industrial and Systems Engineering Black Organizations Council
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Steven Campbell 4th year	Computer Engineering Student Alumni Associates
Megan Coleman 3rd year	Finance First Generation Mentor - Hokies First Peer Mentoring Program
Lauryn Davis 4th year	Black Organizations Council
Gabrielle Dugan 3rd year	Biological Systems Engineering Undergraduate Research Assistant
Louisa Glazunov 4th year	Communications Omega Phi Alpha
Lauren Hall 4th year	Biochemistry VT Engage Student Leader
Julianna Jones 4th year	Industrial and Systems Engineering Peer Career Advisor - Smith Career Center
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Maddie Martin 4th year	Multimedia Journalism Major and Sociology Experiential Learning Communication Intern - Office of Learning Partnerships
Angelo Perez 4th year +	Management EIT & HRM Transfer Student Organization
Sadie Slavin 4th year	History Venture Out at VT Leader
Rida Subzwari 3rd year	Industrial and Systems Engineering Student Hip Hop Organization
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Myra Blanco	Virginia Tech Transportation Institute
Leanna Blevins	Health Science Education Institute
Kristy Collins	Fralin Life Sciences Institute
Gary Gardner	American Gas Association
Ben Grove	College of Agriculture & Life Sciences
Jim Henderson	Career & Professional Development
Bob Lam	BobLam Solutions
Phyllis Newbill	Creativity, Arts & Technology
Cathy Sutphin	4H Youth Development
Vicki Pitstick	Academy for Experiential Learning

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John Ferris	Faculty Senate
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Becca Scott	Career and Professional Development
Rick Sparks	Registrar
Keri Swaby	Office of Undergraduate Research
Zach Underwood	University Advising
Quinn Warnick	Technology-Enhanced Learning and Online Strategies
Vicki Pitstick, Kim Filer	Academy for Experiential Learning (CETL)

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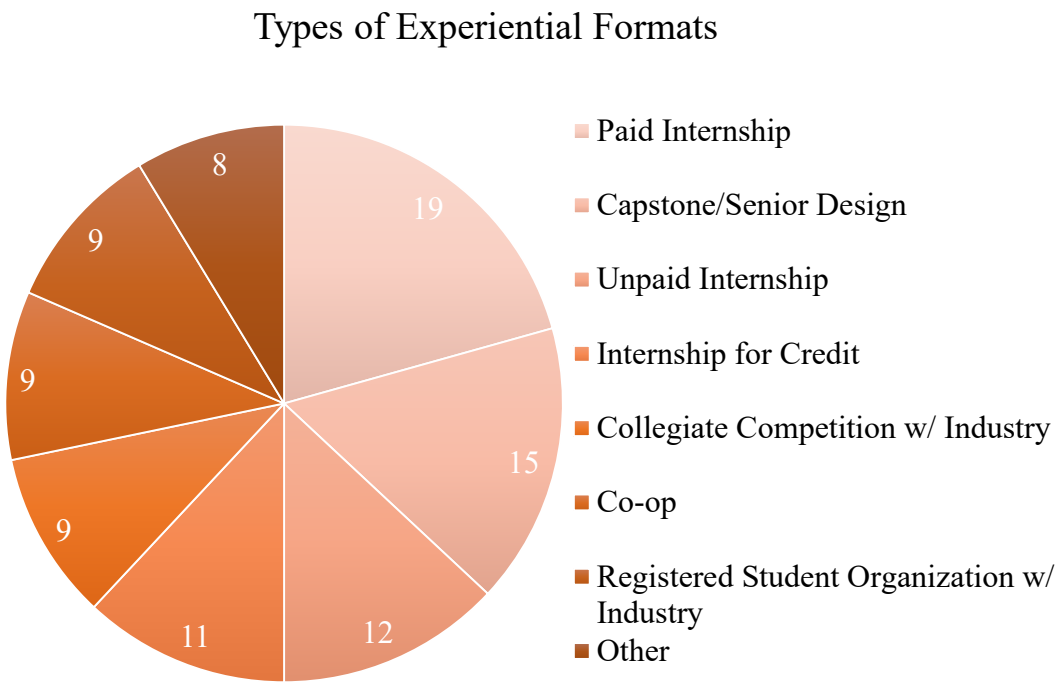
Amanda Morris	Professor, Associate Chair, Department of Chemistry
Vicki Pitstick	Director, Academy for Experiential Learning
Donna Sedgwick	Assistant Professor, Department of Sociology
Dean Stauffer	Professor, Department of Fish and Wildlife Conservation

APPENDIX B: EXTERNAL CONTRACTS

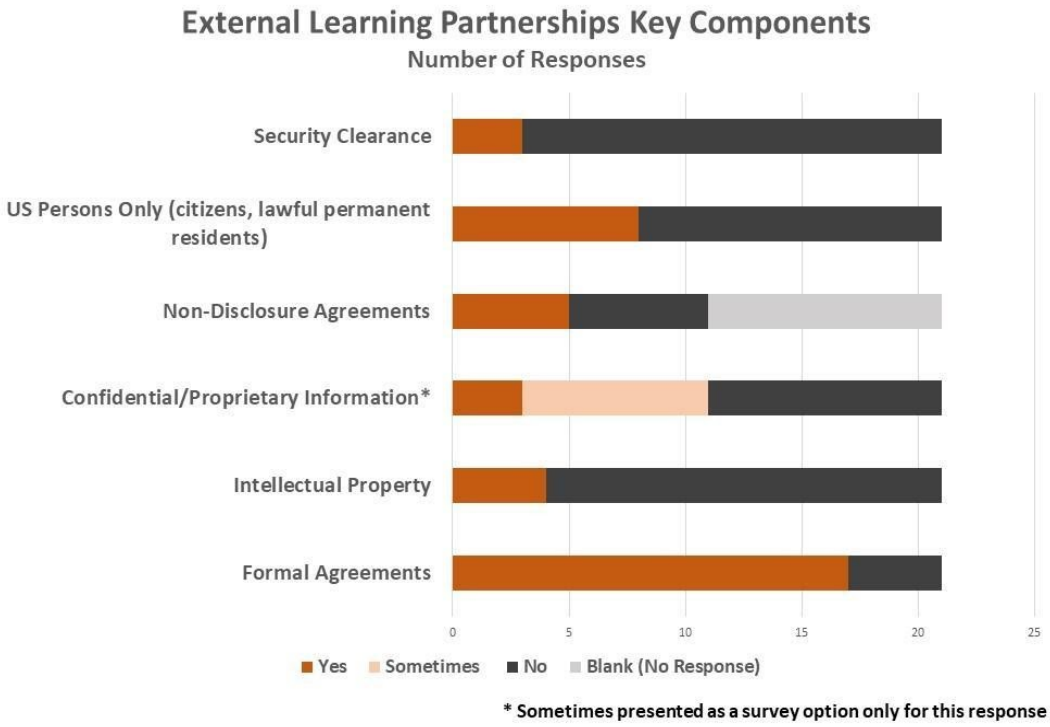
The External Learning Partnership Task Force surveyed the university community regarding engagement with external partners for education purposes. Survey responses came primarily from the Colleges of Engineering and Agriculture and Life Sciences and represented the entire range of degree-seeking students. Experiential learning with external learning partners took many forms with paid internships and capstone/senior design being the most frequent. It is important to note that the profile of experiential learning types differs by college and discipline. In engineering and agriculture, competition teams and student organizations with industry partners are more prevalent than in other colleges.

FIG. B1. TYPES OF EXPERIENTIAL LEARNING FORMATS CURRENTLY EMPLOYING EXTERNAL LEARNING PARTNERS (NOT ALL INCLUSIVE)



To better understand the complexities university faculty and administrators face when establishing external learning partnerships, survey respondents were asked to identify key components of the partnerships they manage for their programs. Fig. 18 shows the complications reported, with formal agreements the most common key component followed by confidential/proprietary information and US citizenship required.

FIG. B2. SURVEY RESPONSES TO EXTERNAL LEARNING PARTNERSHIP KEY COMPONENTS



The following figures contain the proposed workflow for handing contracts and sponsored programs (Fig. B3, Fig. B4). An Experiential Learning Agreement would be required if the sponsor is providing funding through a fee structure or if the sponsor retains intellectual property rights. If the sponsor is providing a donation, then an agreement is not required and funding will be handled through the Virginia Tech Foundation.

FIG. B3. PROPOSED WORKFLOW FOR HANDLING FUNDED BRIDGE EXPERIENCES

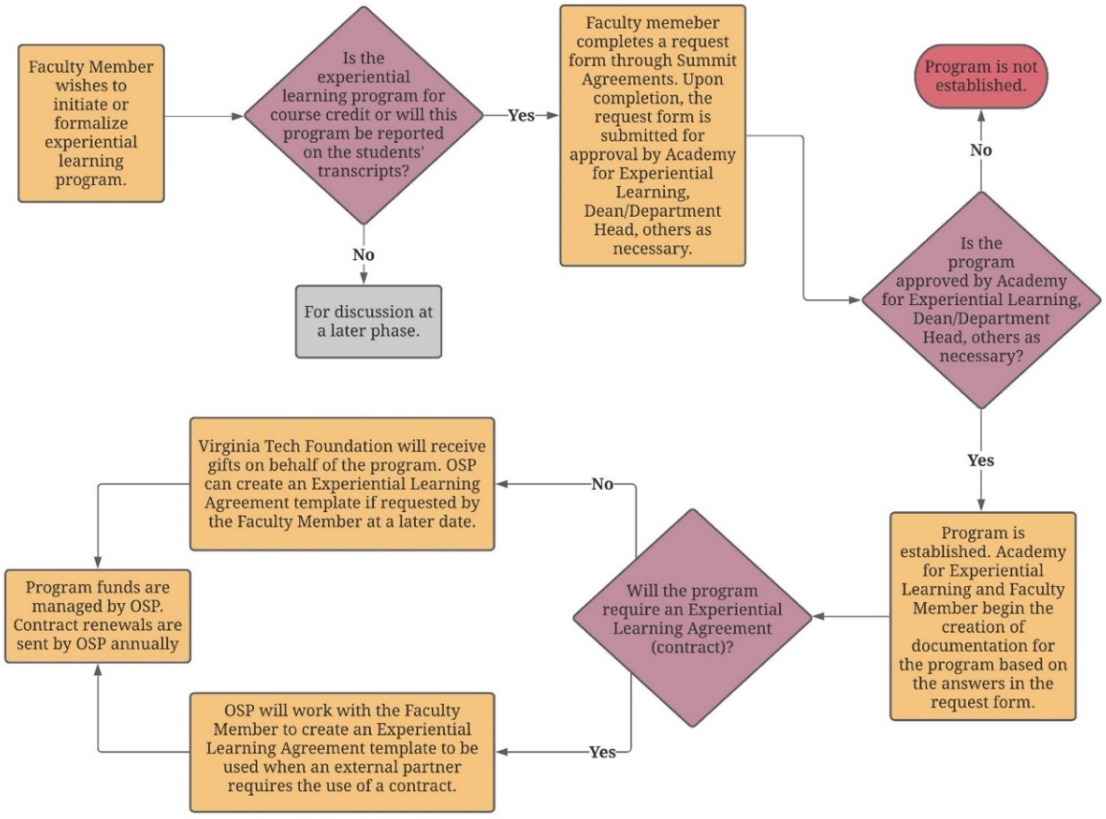
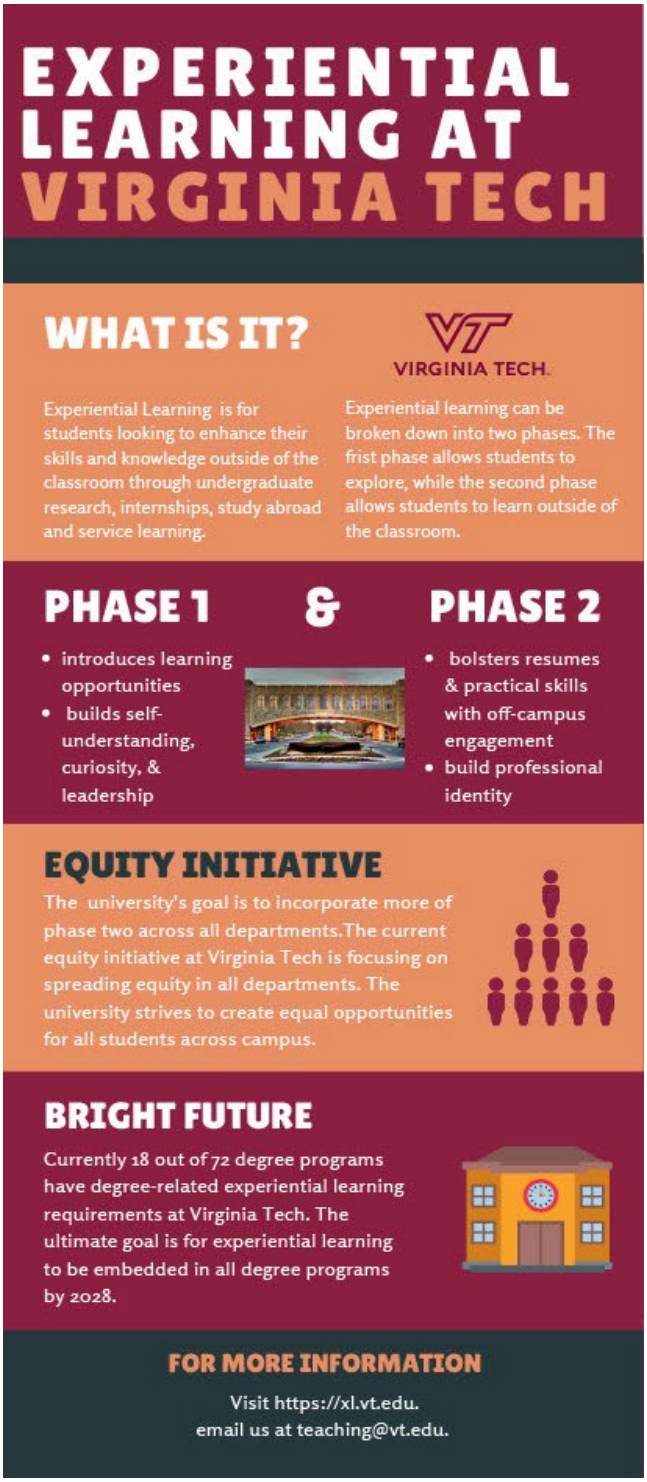


FIG. B4. PROPOSED PARTNERSHIPS ACROSS VIRGINIA TECH OFFICES FOR EXTERNAL COLLABORATIONS

		Administrative Partnering Unit					
		Office of Sponsored Programs	University Legal Counsel	Office of Export & Secure Research Compliance	LINK/VTIP	Virginia Tech Foundation	Student Legal Services
Program Criteria	Type of Agreement	Contract				Gift	
	Non Disclosure Agreements (NDA)	Institutional NDA	Individual NDA Faculty				Individual NDA Student
	Intellectual Property	Sponsor Owned			University Owned		Student Owned
	Proprietary Information			Export Controlled			
	Nationality Restrictions			US Citizens or Persons only			
	Security Clearances			Security Clearances			

APPENDIX C: PR 3144 CLASS MATERIALS

FIG. C1. STUDENT-CREATED MATERIALS.



APPENDIX D: FACULTY PERSPECTIVES ON EXPERIENTIAL LEARNING

In the document *Faculty Perspectives on Experiential Learning*, the Faculty Advisory Committee defined experiential learning broadly and operationalized the focus of the initiative on types of experiential learning to support students bridging to post-graduation endeavors. At this point in program development, the working name of the program was career-bridge experiential learning. Below are excerpts from the Faculty Advisory Committee report operationalizing the initiative.

Defining experiential learning:

We use deliberate and thoughtful strategies (e.g., scaffolded instruction that allows for practice and revision) to facilitate student transitions from general critical skills and content to more discipline-specific learning outcomes. Experiential learning is one such approach. Experiential learning is a pedagogical approach that offers students opportunities to use their understanding and skills to address problems in context.

Experiential Learning can be described along several dimensions: content, physical context, and learning outcomes. The first two dimensions exist on spectrums that span the poles of theory (rational contemplation and abstraction of general principles) and praxis (informed and reflective action toward specific ends):

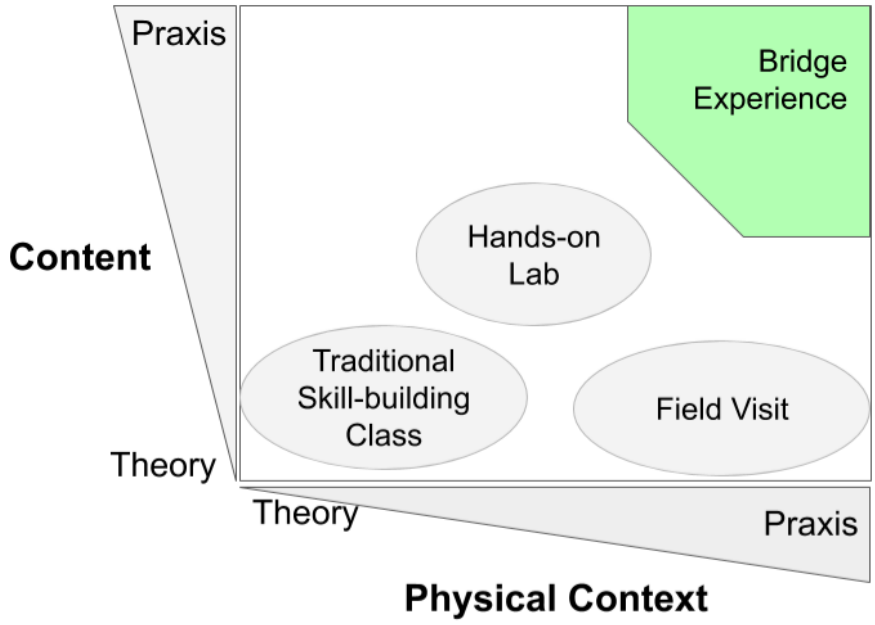
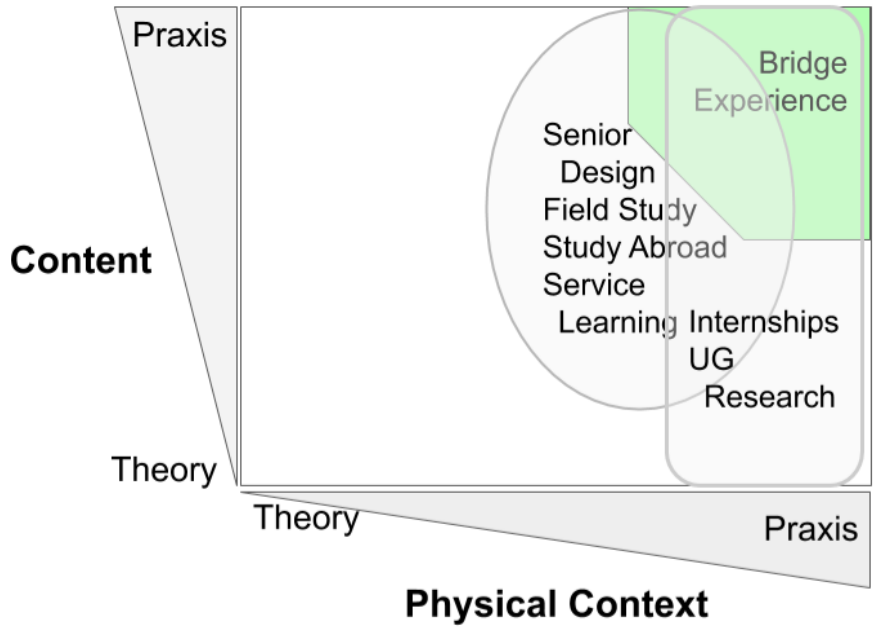
- Content
    - Theory pole: Fundamental concepts and skills developed and demonstrated by addressing generalized, structured, or sample problems
    - Praxis pole: Specific disciplinary knowledge applied to specific contemporary problems
- Physical context
    - Theory pole: Experiences take place in a structured educational environment (e.g., classroom)
    - Praxis pole: Immersion in specific professional environment

The third dimension, learning outcomes, pertains to the number and degree to which the experience has outcomes that are curricular vs. extracurricular/co-curricular:

- Curricular learning outcomes satisfy specific curricular requirements of a degree program, generally involve a substantial faculty role, and may earn academic credit.
- Extracurricular/co-curricular learning outcomes help shape students' personal and professional identities.

Varieties of experiential learning can be distinguished based on how they calibrate these three dimensions. For instance, the following typical learning experiences, both exploratory and bridge, might occupy these regions with regard to content and physical context.

FIG. D1. DIFFERENTIATION BETWEEN EXPLORATORY AND BRIDGE EXPERIENTIAL LEARNING BASED ON CONTENT AND PHYSICAL CONTEXT

Exploratory: These experiences emphasize fundamental skills, guided practice, and exposure to new disciplines, ways of thinking, cultures and contexts, problems, and potential career paths. These experiences can be useful for learning throughout a student's time at Virginia Tech.	
Bridge: These experiences help prepare students for post-graduation life and develop a professional identity. They offer opportunities to apply specific disciplinary knowledge to real-world problems, which often take place in a professional environment.	

Experiences featured in these figures are meant as examples rather than as a comprehensive list. Actual experiences may be exploratory, bridge, or somewhere in between; they may be designed by faculty as a means to effectively deliver course content and contribute to academic credits earned (curricular learning outcomes), or they may be offered in order to achieve extracurricular/co-curricular learning outcomes. However, we are especially interested in promoting the development of accessible and equitable experiential learning experiences that can fit within the parameters of career-bridge experiential learning.

Career-bridge experiential learning. Career-bridge experiential learning takes place when a student applies specific disciplinary knowledge to contemporary problems while immersed in a professional environment relevant to the student's career goals. Most often, students take the lead in identifying and pursuing these opportunities. These experiences significantly impact the student's perspective on the career they experienced, can be funded or unfunded and can be curricular (possibly credit bearing) or extra-/co-curricular (non-credit).

Essential components of career-bridge experiential learning are

- a clear purpose and intentional learning outcomes for the student;
- an immersive, transformational experience that will serve as a bridge between the student's academic experience and future employment in the professional world;
- involves student agency as opposed to an experience that is mainly orchestrated by a faculty or staff member through a course or other program;
- a supervisor and/or faculty member that the student is accountable to and who can serve as a resource and mentor for the student during the experience;
- a prolonged experience spanning a semester or more that includes: a) preparation and an orientation for the students; b) support throughout the experience; c) reflection components; and d) a concluding session; and
- an opportunity for students to publicly present about their learning and transformation.

Career-bridge learning outcomes. The student will

- integrate and connect their learning across academic and professional settings;
- conduct themselves in the authentic work setting in ways that exemplify the *Ut Prosim* spirit;
- begin to develop a professional identity, and reflect on their identity development for themselves and as a representative of Virginia Tech; and
- apply academic learning in work settings appropriate for their career plans.

APPENDIX E: DATA

EXPERIENTIAL LEARNING PARTICIPATION

TABLE E1. PERCENT OF 2018 AND 2019 GRADUATES REPORTING INVOLVEMENT IN EXPERIENTIAL LEARNING ACTIVITIES BY COLLEGE

Experiential Learning	College of Agriculture and Life Sciences	College of Architecture and Urban Studies	Pamplin College of Business	College of Engineering	College of Liberal Arts and Human Sciences	College of Science	College of Natural Resources and Environment
2018							
Volunteer	65	34	33	22	53	50	45
Part-time job	56	37	40	26	55	50	47
Summer job	56	50	51	30	57	49	52
Unpaid internship	23	20	14	8	35	15	28
Paid internship	37	79	80	77	34	33	52
Co-op	1	3	1	20	1	1	1
Undergraduate research	24	8	5	34	13	51	36
Field study	27	3	8	2	27	14	17
2019							
Volunteer	56	25	18	15	43	40	39
Part-time job	51	33	37	21	49	43	44
Summer job	44	46	39	29	45	50	43
Unpaid internship	26	22	15	7	39	17	26
Paid internship	56	93	89	84	65	54	73
Co-op	2	4	1	19	1	2	3
Undergraduate research	37	10	5	35	16	50	34
Field study	28	4	8	2	30	12	23

EXPERIENTIAL LEARNING AND COVID-19

Students participating in experiential learning activities were surveyed at the beginning of the fall 2020 semester. Experiential learning was divided into 4 broad categories of research, field study, internships, and service, and the modality of those experiences was categorized into fully remote and any in-person activities (hybrid or fully face-to-face). The overwhelming majority of experiences were undergraduate research (Fig. E1). Despite restrictions on in-person activities, 70% of students who participated were able to engage in some in-person experience (Fig. E2). The Colleges of Engineering and Science had most experiential learning activities despite having few or no bridge experience requirements in their degree programs (Fig. E3).

FIG. E1. NUMBER OF STUDENTS PARTICIPATING IN EXPERIENTIAL LEARNING BY TYPE IN FALL 2020

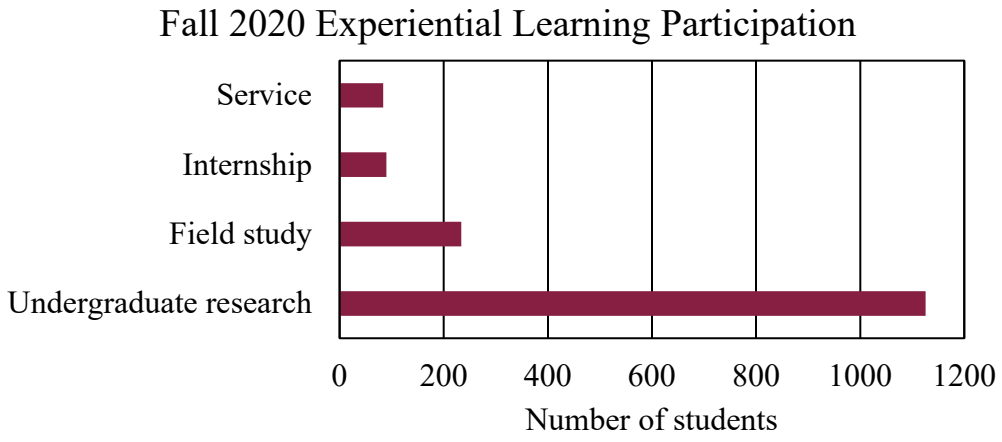


FIG. E2. MODALITY OF FALL 2020 EXPERIENTIAL LEARNING PARTICIPATION

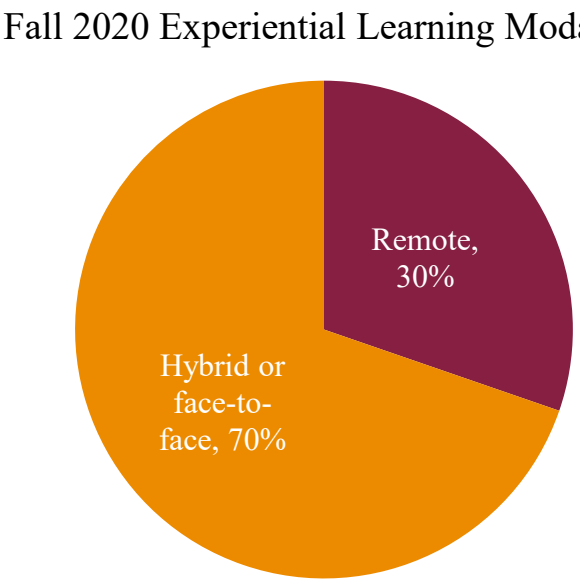
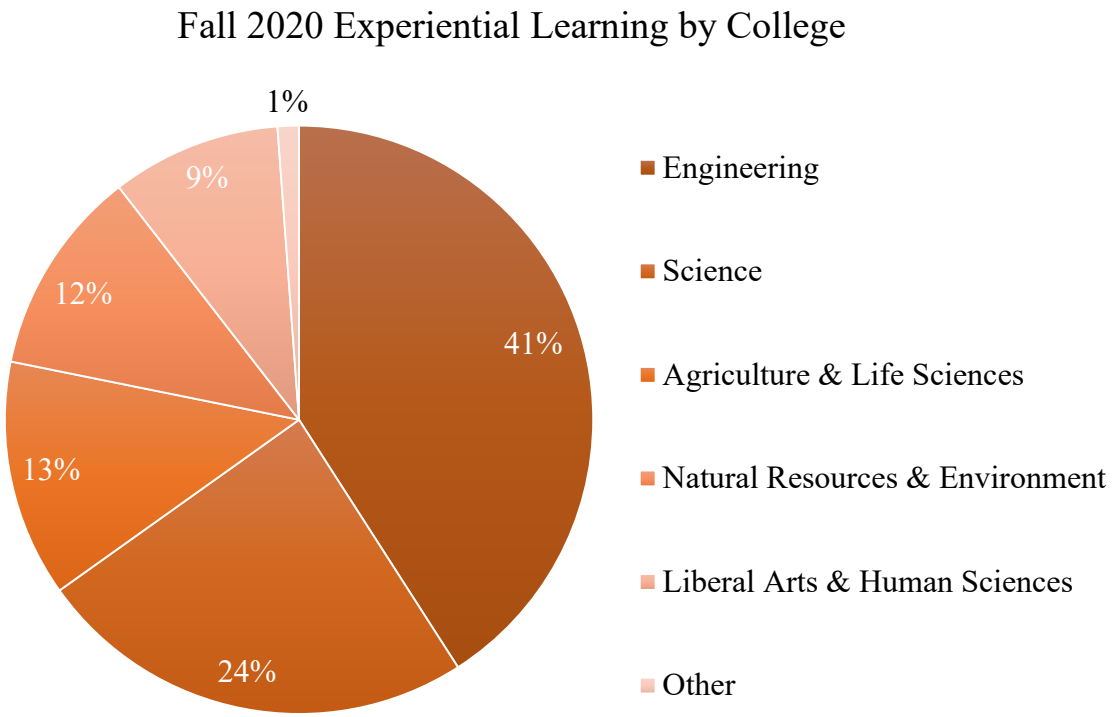


FIG. E3. PERCENTAGE OF EXPERIENTIAL LEARNING BASED ON STUDENTS' MAJOR COLLEGE IN FALL 2020. OTHER INCLUDES ARCHITECTURE & URBAN STUDIES, INTERDISCIPLINARY STUDIES, PAMPLIN COLLEGE OF BUSINESS, AND VETERINARY MEDICINE.



APPENDIX F: BRIDGE EXPERIENCE PROGRAM REQUEST FOR PROPOSALS

The Center for Excellence in Teaching and Learning announces a Call for Proposals to be in the next cohort for the Bridge Experience Program.

What does it mean to participate in the Bridge Experience Program?

Academic programs will receive funding and work with The Academy for Experiential Learning to incorporate bridge experiences as an embedded part of their departmental curricula.

What is a bridge experience?

Bridge experiences are customized to students' needs and ambitions. Common examples include undergraduate research, internships, or other site-based experiences matching student post-graduation goals and approved by departmental faculty. The student will take initiative to identify the right experience, will be mentored throughout, and will reflect on individual growth.

How can the funds be utilized?

The grants are unique in that they are customized to provide funding for the planning elements most likely to yield learning improvements and on a timeline that provides funding when it is most needed. Selected applicants will participate in a 2-year process with the Academy.

How do I find out more information?

Information sessions will be held as the next deadline approaches. Please email Vicki Pitstick at vickip@vt.edu for more information.

When are the proposals due?

Proposals are reviewed twice a year. The next round of proposals are due on Friday, October 15th by 5pm for programs beginning in spring 2022.

Objectives

Experiential learning extends students' traditional classroom learning to tackle authentic problems and work in context. As part of Virginia Tech's strategic plan and QEP, 50% of undergraduate academic degrees should have an experiential learning requirement, termed bridge experience, by 2026. Bridge experiences could include undergraduate research, internships, study abroad, service learning, apprenticeships, clinical experiences, co-ops, field work experiences, competitions, and other place-based experiences as deemed appropriate by departmental faculty. The intent is for bridge experiences to support students through the transition from graduation to future endeavors by aligning their preparation with post-graduation goals in a meaningful way. As a result of bridge experiences, students will be able to

- apply and connect their learning across academic and professional settings;
- demonstrate professional self-awareness by articulating their personal and professional development; and
- demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and/or their field.

Required characteristics of bridge experiences include

- a clear purpose and intentional learning outcomes for the student;
- an immersive, transformational experience that will serve as a bridge between the student's academic experience and future employment in the professional world;
- student agency as opposed to an experience that is mainly orchestrated by a faculty or staff member through a course or other program;
- a supervisor and/or faculty member that the student is accountable to and who can serve as a resource and mentor for the student during the experience;
- a prolonged experience spanning a semester or more that includes preparation and an orientation for the students, support throughout the experience, reflection components, and a concluding session; and
- an opportunity for students to publicly present about their learning and transformation.

The Academy for Experiential Learning provides financial and professional development support to academic programs throughout the process of embedding bridge experiences in degree programs. At the end of the process, all students are expected to have access to these critical learning experiences at scale. Teams of 3 to 5 people who are ready to engage in a 2-year process culminating in a degree-embedded bridge experience requirement are strongly encouraged to apply. Applications will be competitive, and selected teams will be invited to begin working with the Academy for Experiential Learning to develop a full proposal.

Program timeline by semester

Environmental scan. The first full semester and preceding summer (Spring 2022) will be spent participating in professional development, identifying needs and gaps, and beginning to develop plans to fill the identified gaps.

Planning. The second semester (Fall 2022) will be spent identifying the curricular change that works for the academic program's students. The team will be developing formal plans around communicating with students, academic advising, administrative processes, and connecting students with opportunities.

Implement and assess. The third semester (Spring 2023) will be spent implementing planned programs and tracking progress. The quality of bridge experiences will be assessed based on the student learning outcomes for the Bridge Experience Program and the academic program.

Continued implementation and governance. In the fourth semester (Fall 2023), the academic program should begin the process of embedding a bridge experience requirement in the checksheet(s) for all students. Appropriate governance forms with revised checksheet(s) should be submitted by the end of the semester. Implementation and assessment efforts should continue as an ongoing process. Bridge experiences represent an ongoing commitment to provide all undergraduates access to authentic learning experiences that will support their transition to life beyond the university.

Requirements

At the beginning of each fall semester, all participating teams will attend a mandatory retreat to provide updates on progress and challenges from the previous semester. After that, all participants will be expected to attend a monthly experiential learning community of practice meeting to engage in informal discussions with colleagues from across campus. In addition, team leaders will participate in monthly planning meetings to provide progress updates.

The entire team is required to attend regular meetings during the first semester, provide updates at departmental faculty meetings at least once per semester and report back on those discussions, and complete reporting requirements each semester. Each individual team member will participate in at least 1 community of practice meeting each semester. The academic program will sign a Memorandum of Understanding and will manage funds according to the approved budget. At the conclusion, academic programs will implement bridge experience requirements into all undergraduate curricula.

Funding

At the end of the planning process, teams will submit implementation plans and budgets. Once approved by the Academy, a Memorandum of Understanding will be signed by the Department Head and fiscal manager, and teams will document expenses in their final report. Summer stipends will be paid out in the second year of the program. In order to receive stipends, teams as a whole and the individual faculty member must be compliant with program requirements. Acceptable funding uses may include

- faculty summer stipend (max 75% of budget);
- prototype bridge experience programs that demonstrate sustainability and scalability;
- career fairs or similar resources;
- communication to students about bridge experiences; and
- any student-facing programs for bridge experiences

Funding may not be used for faculty buyout for the development of courses or other costs associated with developing or revising courses. Proposals will be funded up to $20,000 for the 2-year period.

Evaluation criteria

Each proposal will be evaluated based on the following criteria:

- Is the team diverse with demonstrated capacity to implement new programs?
- Is the academic program prepared to implement bridge experiences with broad administrative support?
- Is there evidence of initial engagement around the implementation and challenges related to bridge experiences?
- Does the team demonstrate a student-centered perspective of curricular change?

APPENDIX G: STUDENT PROPOSAL

Bridge Experience Student Proposal

Name: _____

E-mail: _____

Check the type of experience:

_____ Internship _____ Study Abroad

_____ Service Learning _____ Undergraduate Research

_____ Field Experience _____ Co-op

_____Other _____

Plan:

- When will you be engaged?
  - Start date:
  - End date:
- Name of business, lab, etc.
- Location
- What will you be doing (activities, responsibilities, etc.)?

Purpose: Explain how this experience will help bridge to your future plans?

Learning objectives: Explain how your bridge experience will help you

- Apply academics to a professional setting
- Develop personally and professionally
- Use your knowledge and skills in service as appropriate to the professional setting
- *Add your own optional learning objectives unique to your experience*

Departmental student learning objectives *(if desire to add)*

Explain how your bridge experience will meet each of the following departmental learning objectives:

***Departments can add customized learning outcomes here*

Reflection plan: What is your plan for reflection over the duration of your bridge experience (pre, during, and post experience) and how will your mentor assist with this plan? Reflecting is designed to assist you in making connections between concepts and skills learned, academic coursework, career plans, and professional identity/personal development.

***Departments can add customized reflection process here*

Budget for experience: What are your anticipated costs for your experience? Examples of anticipated costs for different types of experiences are:

***Departments can add customized cost estimates here*

Showcase: How will your learning and bridge experience be showcased to others? (Appropriate to type of experience)

Project mentor/supervisor: The project mentor is expected to be a person who possesses expertise in the project area. This may be a faculty member, community partner, or internship supervisor.

Mentor/supervisor:

Mentor/supervisor email:

Student Signature: _____ **Date:** _____

Project Advisor Name (print): _____ **Date:** _____

Center for Excellence in
TEACHING AND LEARNING

APPENDIX H: STUDENT PROPOSAL RUBRIC

Bridge Experience Qualification Criteria	Strength of Evidence			Reviewer Comments:
	Strong	Mod.	Low	
Plan				
Student will be engaged in a site-based, professional experience.				
The experience has the potential to better prepare the student for a career.				
Purpose				
Student has selected this experience with intention and recognizes the importance for professional development.				
Experience is aligned with the student's future plans.				
Learning				
Potential for the student to apply academics to a professional setting through this experience.				
Potential for the student to develop professionally and personally through this experience.				
Potential for student to use knowledge and skills in service within a professional context during the experience.				
Showcase				
Describes how the student will showcase the experience and learning from the experience.				
Showcase format is appropriate for the type of experience.				

Reviewer: _____ **Date:** _____ **Decision:** Approve Revise

APPENDIX I: SELF-EVALUATION

Student Final Self-Evaluation

DRAFT

Please review each of the characteristics listed below and your performance using the following rating system. Place a check in the appropriate box.

1. Unsatisfactory (Never demonstrates this ability/does not meet expectations)
2. Below average (Seldom demonstrates this ability/rarely meets expectations)
3. Average (Sometimes demonstrates this ability/meets expectations)
4. Above average (Usually demonstrates this ability/sometimes exceeds expectations)
5. Superior (Always demonstrates this ability/consistently exceeds expectations)

Characteristic	**1**	**2**	**3**	**4**	**5**
Professional identity					
Communication: Ability to effectively articulate ideas using written, oral, visual, and non-verbal communication skills appropriate to the context.	☐	☐	☐	☐	☐
Dependability and Initiative: Completed tasks in a thorough, accurate, and timely manner. Demonstrated resourcefulness, energy, and drive to achieve results.	☐	☐	☐	☐	☐
Professionalism: Ability and desire to maintain a professional presence. Demonstration of personal ethics, positive attitudes, and professionalism appropriate to the context.	☐	☐	☐	☐	☐
Humility: Ability to learn from mistakes and from others. Willingness to improve weaknesses and to learn from new situations.	☐	☐	☐	☐	☐
Teamwork and Courtesy: Treated others in a polite, respectful, tactful, considerate, and dignified manner. Managed emotions and conflict with others while contributing towards a common goal.	☐	☐	☐	☐	☐
Apply learning					
Skills: Demonstrated technical skills in performing a job. Learned additional skills needed to accomplish tasks.	☐	☐	☐	☐	☐
Knowledge: Understood concepts and intellectually applied such concepts to one's work. Made connections between coursework and tasks.	☐	☐	☐	☐	☐
Problem Solving: Exercised sound reasoning to analyze issues, synthesize information, make decisions, and solve problems. The ability to think critically and strategically to develop original ideas and innovative solutions.	☐	☐	☐	☐	☐
Service					
Personal Growth: Deepened attitudes and beliefs as a result of learning from diverse communities and cultures.	☐	☐	☐	☐	☐
Civic Identity: Used talents and skills to contribute to the field and community.	☐	☐	☐	☐	☐
Academic program *sample questions to change based on department needs					
Creativity: Ability to contribute unique solutions to solve problems and to serve clients.	☐	☐	☐	☐	☐

COMMENTS: Please provide additional comments about this individual's professional development.

APPENDIX J: REFLECTION PROMPTS

Bridge Experience Reflection Process and Prompts
DRAFT

Directions: Please write a response for each category.

(Category 1) What? [Describe your observations and experiences without judgment.]
Describe your bridge experience. Consider the following:

- What did you do?
- What was your role?
- What did you contribute?

(Category 2) So What? [Process and explain your feelings and thoughts on a deeper level.]
[Application] Describe how you applied academic coursework in your experience. Consider the following:

- How was your experience connected to ideas or topics you've studied?
- Was your experience consistent with topics you've studied or were there differences?
- What academic misconceptions did you have?

[Self-assessment] Describe the ways you developed professionally. Consider the following:

- What was the best/worst/most challenging thing that happened?
- What professional skills did you develop or improve as a result of this experience?
- What professional skills do you need to continue developing?

[Ut Prosim] Describe how you served others as appropriate to your experience. Consider the following:

- How did you use your knowledge, skills, and abilities to serve others during your experience?
- Do you feel like you made an impact?
- What did you appreciate (about another person, your experience, etc.)?

(Category 3) Now What? [Consider how your experience might shape future attitudes and behaviors.]
Describe what you will do next. Consider the following:

- How did this experience affect your career goals?
- Where do you go from here? What's the next step?
- What are you interested in learning more about?

(Category 4) Departments can add custom questions here.

APPENDIX K: REFLECTION RUBRIC

DRAFT

Students engaging in a bridge experience will reflect on their experience as it relates to the program learning outcomes. Reflections will be scored using the rubric.

Students engaging in a bridge experience will be able to:

- apply and connect their learning across academic and professional settings;
- demonstrate professional self-awareness by articulating their personal and professional development; and
- demonstrate a dedication to using their knowledge, skills, and talents in service to others, communities, and/or their field.

Outcome	0	1	2	3	4
Apply academics to experience	Not evident	Identifies connections between experiences and academic texts and ideas in a surface manner.	Compares experience and academic knowledge to infer differences as well as similarities.	Effectively selects and develops examples of experiences to illuminate concepts/theories/ frameworks of field of study	Meaningfully synthesizes connections among experiences to deepen understanding of fields of study and broaden points of view.
Professional self-assessment	Not evident	Describes performance with general descriptors of success and failure.	Articulates strengths and challenges with performance or events to increase future effectiveness.	Evaluates changes in own learning and performance over time with awareness of context.	Envisions a future self and expresses plans that build on past experiences across multiple contexts.
Ut Prosim: Use of abilities and talents in service	Not evident	Describes performance with general descriptions of effort for others and/or the project.	Articulates pros and cons of performance in experience and how it affected others or the environment.	Evaluation of changes in sense of purpose outside of experience or self.	Synthesizes affective growth regarding role in serving others connected to experience and expertise.
Department-specific objective(s)	Not evident	Varies	Varies	Varies	Varies

APPENDIX L: SHOWCASE RUBRIC

Showcase Reviewer Guide (DRAFT)

Reviewer:
Student:
Experience Title:

Instructions: Spend about eight to ten minutes interacting with your assigned presenters. In order to encourage deeper reflection, use the questions/statements to help you evaluate each category, and then give each category a rating using the following scale:

1. Unsatisfactory (Never demonstrates this ability/does not meet expectations)
2. Below average (Seldom demonstrates this ability/rarely meets expectations)
3. Average (Sometimes demonstrates this ability/meets expectations)
4. Above average (Usually demonstrates this ability/sometimes exceeds expectations)
5. Superior (Always demonstrates this ability/consistently exceeds expectations)

Category	**Rating**
Apply Learning • What's one thing that surprised you about your experience? • How did your experience fulfill your personal goals? • How has this experience changed you as a person? • How did your experience relate to your career and life goals? • How will this experience influence your career and life goals going forward?	
Professional Identity • Is presented well and a clear representation of the student's experience • Demonstrates the personal and professional learning obtained by the student	
Experience Planning • What motivated you to pursue this as your experience? • What barriers or challenges did you need to overcome in order to identify and establish this as your experience?	
Experience Implementation • Explain your Bridge Learning Experience. • Who was your project mentor? What did you learn by working with your mentor during your experience? • If you were to change one aspect of your experience, what would it be & why? • Tell me about a favorite moment that occurred while completing your experience.	
Reviewer Comments	**NA**