STEM TRANSFER PARTNERSHIP SERIES

The Power of Partnership: Building Strong STEM Transfer Connections

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The STEM Transfer Partnerships (STP) initiative aims to improve transfer and completion rates for STEM students from low-income backgrounds. Nine partnership teams from 2-year and 4-year institutions focused on three key areas: advising, recruitment and enrollment, and faculty and curriculum. By collaborating on a variety of innovations and improvements, the teams created smoother transfer pathways, increased student awareness of STEM opportunities, and provided targeted support. Key drivers of success across all partnerships highlight the importance of building relationships, student-centered approach, data-driven decision making, institutional leadership and resource integration. These strategies can inspire other institutions to work together to enhance transfer and completion rates for STEM students.

INTRODUCTION

The need for STEM transfer students from low-income backgrounds to complete bachelor's degrees is a pressing issue. A substantial portion of those students start their educational journey at 2-year colleges. The lack of transfer and completion of these STEM students is deeply rooted in systemic and structural barriers, which leads to many students not completing their degrees (Wang, 2021).

Given the multifaceted nature of this problem and how it spans across institutions, inter-institutional transfer partnerships are vital. The STEM Transfer Partnerships (STP), composed of teams of faculty, staff, and administrators, have been working collaboratively to identify and remove barriers at various stages of the transfer process (Cate et al., 2022). Their efforts create smoother pathways for students to earn baccalaureate degrees (Wetzstein et al., 2024). This data note shares the varied efforts of the nine STEM Transfer Partnership teams working together to enhance their partnerships and student outcomes. These case studies exemplify what context-driven changes transfer partnerships can make to enhance transfer students' knowledge, opportunities, experiences, and success.

To limit the size of this brief, we are sharing one area of each team's work rather than the entirety of their efforts. We also provide a sample of what partnerships can do to improve students' experience, serving as exemplars for practitioners. We built into the STP structure leadership buy-in, the utilization of data and student input to understand barriers and how their changes affect students. We find these features critical in the work and will discuss their influence on the team's accomplishments in the conclusion.

CASE STUDIES ON BUILDING TRANSFER PARTNERSHIPS

Levels of Partnership

At the beginning of their work together, the STEM Transfer Partnership teams utilized a framework (Yeh & Wetzstein, 2020) to examine their degree of partnership along a continuum.

- Cooperation, not considered a partnership, is the passive sharing of information.
- Coordination, where tasks are coordinated, and goals are compatible.
- Collaboration, which involves shared purpose, strategies, procedures and goals.
- Alliance, which is integrated policies, procedures, programs or structures.

The teams analyzed five inter-institutional dimensions important for transfer: advising, recruitment and enrollment, faculty and curriculum, financial aid, and data sharing. The levels of partnership were defined and operationalized for each domain (see Yeh & Wetzstein, 2020, p.27-28). This framework provided a common language across the community of practice for the teams to collectively understand and describe their current and intended level of partnership and practices therein.

At the first convening of the community of practice (COP), teams elected which domains to focus on and set target levels of partnership and attendant activities for each. At each COP convening, teams did exercises to assess and realign their goals, share their lessons and needs, and discuss both alongside the other teams. Most teams began at Cooperation and advanced to higher partnership levels by the fifth convening in advising, recruitment and enrollment, and faculty and curriculum (unless already at high levels). These three domains saw the most transformation in partnership development, followed by data sharing and financial aid. This brief describes initiatives across all nine teams and goes in-depth with one case study per team that frames the results from these three focus areas. The key takeaways from the teams featured in each section are summarized at the end.

CASE STUDIES | ADVISING

Across the nine teams involved in our STEM Transfer Partnerships, there was a shared focus on improving advising practices for STEM students, particularly those from low-income backgrounds. Each team adopted strategies and practices that were tailored to their partnership needs. Some teams focused on developing comprehensive transfer and program maps to streamline guidance regarding course offerings and transfer requirements and make them easily accessible. Other teams focused on establishing frequent direct interactions between advisors and students, with initiatives such as one-on-one advising sessions, cross-institutional advising via direct communication with 2-year students and 4-year advisors virtually and through campus visits, group advising events, integrating advising into courses, and advising presentations and Q&A sessions. Additionally, several teams implemented new advising innovations, creating transfer checklists and off-boarding modules, engaging in transfer fairs, and revamping their institutional websites with transfer information. To further illustrate how teams worked to enhance STEM transfer by implementing various advising practices, we highlight three case studies below. Each case study describes the key advising initiatives undertaken by teams, their impact on student outcomes, and the lessons learned from their efforts.

Cascadia College and the University of Washington Bothell

A unique approach by the partnership between Cascadia College (CC) and the University of Washington Bothell (UWB) was the development of three subgroups across both institutions in advising, curriculum, and recruiting to engage in their initiatives and generate outcomes. Collaborating in this way weaves in essential relationship-building to strengthen the partnership. In the advising domain, they began in Cooperation and are moving beyond their Coordination goals toward Collaboration.

Program Mapping: The advising sub-group collaborated to create clear course maps for Engineering despite the challenge of the three UW campuses, each with a different course structure. The academic programs page on the Cascadia website includes carefully curated information specific to each degree path for transfer students and the corresponding local institution transfer opportunities, including UWB. An articulation agreement between Cascadia and UWB was created during this partnership and is located on the Electrical Engineering page. The UWB faculty developed four-year plans for students so students could prepare these plans during their first years at Cascadia, especially for those who are calculus-ready. Cascadia

Advising created additional four-year plans for students who are not calculus-ready in their first quarter. The admissions office developed the Transfer Planning Worksheet, which this inter-institutional advising team updated to include information about financial aid. This equivalency and mapping work has been shared with advisors and faculty. Positive survey responses about advising and the transfer process indicate these efforts are reducing advising-related frustrations.

Collaborative Advising: The partnership's advisors designed comprehensive advising initiatives to meet the unique needs of students by establishing communication with one another about Engineering and STEM, facilitating joint advising presentations, and hosting Q&A sessions offering detailed transfer information. This partnership provided students with direct access to advisors and faculty from both institutions. Faculty involvement in advising has enhanced student clarity and focus. These interactions elevated students' comprehension of transfer requirements and solidified their understanding of their desired engineering programs.

Strategic Faculty Engagement: The in-depth engagement of faculty members at both institutions was essential to the partnership's success. Faculty provided invaluable insights into program requirements and career paths by actively participating in advising sessions, classroom visits, mentorship opportunities, and stewarding an articulation agreement for Engineering. Faculty took advantage of their co-located institutions to strategically focus visits on the beginning and ending series of engineering coursework. The early faculty visits helped students decide which engineering pathway was most appropriate and whether engineering was right for them. This collaborative approach empowered students to make informed decisions about their academic paths, develop personalized academic plans, and build strong connections with their future academic communities.

Initial Examination of Student Outcomes and Stories

To assess the effectiveness of these initiatives, the partnership has employed a variety of metrics, including student enrollment, transfer rates, and student satisfaction surveys. While data collection is ongoing, initial findings indicate positive impacts on student outcomes with 46% of Cascadia and UWB students surveyed over three quarters attributing their academic success to effective communication with advisors.

Additionally, student testimonials highlight the transformative impact of advising on their academic journeys. Many students have shared stories of overcoming challenges, gaining clarity about their career goals, and successfully transferring to UWB. Here are examples of what students shared about how advising helped their transition: "Having the advisor clearly tell what the credits from Cascadia transferred into UWB"; "The advising office, with solid guidance and help understanding the requirements"; and "Good communication from my advisors and an extensive description of what was required for my transfer."

The partnership between Cascadia College and the University of Washington Bothell has successfully established a collaborative advising model that yields positive student outcomes.

Green River College and the University of Washington, Seattle

The partnership between Green River College (GRC) and the University of Washington, Seattle (UWS) started at Cooperation. It reached the Collaboration level (trending toward Alliance) in their advising area of focus by strategically leveraging both new and existing capacities, guided by layered data on students' experiences. This partnership focused on facilitating students' transfer into the UWS College of Engineering's departments of Chemical Engineering, Materials Science and Engineering, and Mechanical Engineering. The partnership achieved Collaboration status by prioritizing collecting student experiences and feedback, increasing the availability of transfer informational materials, developing transfer-targeted joint advising sessions, and incorporating UW Engineering personnel into GRC's Engineering 100 course. This course is an introduction to careers in Engineering. As part of the course, UW engineering advisors visited the classroom to talk with students about the prerequisites, transfer course and program requirements. As part of the course curriculum, students were required to attend the STEM seminar series. This seminar series was started in conjunction with the STP project to inform and inspire students to embark in a career in engineering. The speakers

include professionals from local industry, graduate students from UWS and advisors who describe the admission requirements for programs at UWS.

Program Mapping: The team created a dedicated GRC program map on the UWS Chemical Engineering website and incorporated GRC course equivalencies. They have hosted this map on their respective websites with supplementary guidance on transferring. This includes a clear academic plan aligned with course sequence offerings at GRC for transfer students that emphasizes the value of early advising. The UWS Chemical Engineering website also promotes and informs visitors about the option to "reverse transfer."

Transfer-targeted joint-advising: The partnership developed scaffolded co-advising across GRC and UWS. GRC students gained more direct access to accurate information from UWS advisors. This included UWS Engineering advisors and faculty attending GRC's campus-wide "Advising Days" and visiting GRC Engineering classes to promote accessible pathways and alternative majors. GRC advisors acquired greater knowledge of how to guide students to be major-ready for transfer, as well as leverage the reverse transfer process. The partnership's advisors met regularly to address mutual questions, concerns, and challenges. By sharing their knowledge of the transfer process and the community college experience from students' perspectives, advisors facilitated more personalized planning by students, and could more readily answer students' questions about admissions or the transfer process.

Such collaborative co-advising also results in transfer of knowledge that is crucial for educational planning. For example, the Chemical Engineering advisor happened to mention to the GRC advisor that UWS was discussing the removal of ENGL 235, a writing course that is listed on ALL engineering pathways. The GRC advisor followed up with a UWS advisor on the status of this decision and found out that the course has now been removed from all UWS engineering requirements. There would have been no way for the Green River advisor to know about this unless the advisor had asked this specific question. This is critical information especially for students at GRC who are relying on financial aid to pay for their courses and are focused on maximizing their financial aid for the courses required for transfer into their program and exemplifies how this collaboration is benefiting students at the course level.

Student Group Discussions: Team advisors met with GRC student groups in March 2024 to discuss joint recruitment and co-enrollment strategies. This included representatives of GRC's Louis Stokes Alliances for Minority Participation (LSAMP) program; Mathematics, Engineering, and Science Achievement (MESA) program; its Asian American and Native American Pacific Islander-Serving Institution (AANAPISI) program; TRiO Student Support Services; and Umoja. UWS advisors provided expert input on GRC's implementation of the "Guided Pathways" model to ensure that GRC's version of the model will prepare GRC students for transfer.

Initial Examination of Student Outcomes and Stories

The GRC-UWS partnership is fostering a collaborative environment that prioritizes open communication and student-centered decision-making. Learning about and incorporating student voices was done in a thoughtful and intentional way. Five GRC students were interviewed about identifying potential barriers to STEM careers and transfer. Through these interviews, the partnership identified key themes shared by both GRC and UW transfer students. To further explore these insights, a survey was developed from the interview responses to gauge STEM identity and belonging and distributed to students. With this student-centered approach in mind, here are five examples of this collaboration's results:

Exposure to research careers: UWS faculty, advisors, and Dean of Sciences attended approximately 75% of GRC's quarterly Virtual Advising Days to co-advise STEM students over the past two years. UW faculty researchers and graduate students participate in the STEM speaker series launched by the partnership where almost 60 unique students have attended. This series has exposed students to career paths in research and helped students clarify their goals by supplying career guidance from STEM professionals, including former GRC students discussing their transfer journeys to UWS.

Increased contact with advisors: The number of GRC students who visit UWS advisors has risen due to students' greater awareness of advisors' availability and connecting directly with advisors at GRC events. For example, the

number of annual contacts between GRC students and UWS Chemical Engineering Advisors increased from zero to 15.

Raised awareness of and increased applications to more accessible majors: GRC students who transfer to UWS typically apply to an extraordinarily competitive subset of available STEM and Engineering majors. The partnership is therefore working to raise students' awareness of more accessible Engineering majors, as either students' primary preference or as an alternative if students are not admitted to their first-choice majors. This has already increased the number of GRC students who apply to Materials Science and Engineering, one of the less frequently chosen Engineering majors, from zero to seven in a single year. Even more remarkable is that of the 13 students admitted to the MSE program in the AY23-24, seven were from GRC.

Strengthened collaboration among STEM student programs: This partnership has contributed to related activities conducted by GRC's LSAMP program. The partnership hopes to extend its impact to students within GRC's MESA program. The STEM seminar series was originally started following a discussion between UWS and GRC as part of the STP project. It is now one of the primary activities for LSAMP scholars and MESA members and is now well established in the GRC community among faculty staff and students. This has led to an organic gathering of STEM students that has steadily increased over the years. The partnership with the Clean Energy Institute (CEI) in Seattle has been strengthened through this work. The collaboration resulted in annual field trips to UW where students were exposed to research labs and introduced to CEI Research. Additionally, this has resulted in many more LSAMP students applying for summer research experiences at CEI and other STEM departments at UWS. Many of them have successfully participated in summer research at UWS.

Increased accessibility of transfer information: The partnership has observed that GRC students are less anxious about transferring because information on this process is much more accessible. For example, advisors estimate they receive half as many questions from students as previously that are attributable to incomplete or inaccurate information on GRC and UWS' websites.

The relationship built between GRC and UWS College of Engineering's departments, particularly the Materials Science and Engineering (MSE) department through this project, was helpful in educating students about this field. Students were more likely to transfer to MSE after they learned about career pathways in the field. The STP project enabled direct conversations between GRC students and UWS MSE faculty members resulting in successful transfer of students into this major.

Clark College and Washington State University Vancouver

The Clark College (Clark) and WSU Vancouver (WSUV) partnership has made significant strides in enhancing student advising and the transfer processes, particularly in biology and STEM. This partnership began its work focused on using student course-taking data to show that the Associate of Science for Biology (MRP) needed to be revised to improve student outcomes. Their data analysis led to a state-level review of the associate's degree. What they found in further data analysis and student focus groups led to many changes in advising. Their advising partnership level started in Coordination, higher than most other teams, advanced to Collaboration and is moving toward Alliance.

Program Map and Regular Cross-Institution Advisor Meetings: The initial state of Clark-WSUV biology advising was characterized by a lack of coordination and misalignment between the two institutions. Clark advisors primarily focused on associate degree completion, while WSUV advisors concentrated on bachelor's degree requirements. This often led to conflicting advice for pre-transfer students.

The biology transfer program map and regular cross-institutional advisor meetings have significantly improved this situation. The goal was to provide a communication resource pre- and post-transfer. The map helped students navigate the different quarter and semester systems, avoid delays in completion due to scheduling and prerequisites, and facilitated communication between advisors. The advisors began to meet monthly to focus proactively on transfer student issues. Their conversations frequently focused on Clark STEM students needing to take the necessary Math courses. By creating this shared roadmap and establishing regular communication, advisors from both institutions can now work collaboratively to support students

throughout their entire academic journey, from Clark to WSUV through degree completion.

The biology transfer program map is more than just a practical tool for student advising. It's catalyzing a broader institutional shift. By visualizing the entire pathway from Clark to WSUV, it's encouraging a longer-term perspective on student success. This shift is evident in the increased collaboration between advisors and a focus on proactive problem-solving, such as addressing the math course challenge for Clark STEM students. Ultimately, this map is fostering a more holistic approach to student support and empowering both institutions to work together towards shared goals.

Faculty Advisor Visits: After hearing from transfer students via focus groups, a WSUV faculty advisor began visiting Clark's introductory biology classes each quarter to discuss what courses Biology majors need to take. These group advising sessions answered questions for Clark students and provided a point of contact at WSUV. Several students who met her at Clark reintroduced themselves and stopped in to say hello after they had transferred.

STEM Transfer Orientation: The same faculty advisor and a Chemistry faculty colleague created a voluntary STEM transfer orientation program at WSUV, now a regular orientation feature. The number of attendees has ranged from 50-125 participants per semester. The faculty provides answers to their questions and concerns and again gives transfer students a connection and someone to ask questions. At orientation, transfer students receive math and science booklets created by WSUV faculty to help them identify success skills and campus resources.

Peer Mentoring: This partnership had funding from two other grants besides the STEM Transfer Partnership initiative that focused on improving transfer student outcomes: the SW RAISE Howard Hughes Medical Institute (HHMI) Inclusive Excellence and the Aspen Transfer Initiative grant. Collectively, these grants allowed for leveraging resources and synergetic outcomes. One important co-creation with the HHMI grant was a peer mentoring pilot program for Biology students. The pilot program pairs WSUV biology transfer students with Clark biology students, often recruited during the faculty advisor visit. The program has experienced successful student engagement and student-led development. The braiding of grant efforts is an important asset for this team. When members of all three grants started meeting together, it allowed for more leadership support and the ability to leverage each other's work.

Initial Examination of Student Outcomes and Stories

Students at Clark learn from WSUV advisors about necessary courses, which also create contacts with individuals at the institutions and lead to an increased sense of connection. Anecdotally, the WSUV advisors are seeing an uptick in Math-taking among incoming transfer students, and students are more prepared with fewer unnecessary courses. STEM orientation also creates a sense of belonging and connections among transfer students and provides answers and resources.

Implementing a peer mentoring program has provided valuable support and encouragement to transfer students. This program has facilitated smoother transitions and fostered a sense of community among students. While the numbers were small, the pilot saw 100% of mentees transfer.

A student story: A first-generation student needed help understanding what a bachelor's degree was, why it was needed for his career, and how to pursue his career interests. He met with a faculty advisor in his biology class, and individually after the class, she set him up with a peer mentor, and he has since applied and transferred.

The STP project has led to broader involvement by community colleges, including Lower Columbia College (LCC). This increased collaboration, spurred by the WSUV/Clark partnership, has opened doors for LCC students. Their participation in monthly STEM advisor meetings and class visits directly impacts student outcomes, providing valuable insights and opportunities that shape their academic and career paths.

Additionally, the math and science skills booklet produced during this project was adopted by a school in the New York SUNY system and they requested that the partnership create a research skills booklet that introduces what research is and how community college students can get involved. That booklet is currently in development by WSUV faculty and several undergrad researchers.

These factors collectively create a supportive framework that improves Clark College students' preparedness for transfer, strengthens connections between the two institutions and raises awareness nationally of the benefits of inter-institutional partnership.

Key Takeaways | Advising

Collaborative Approach to Communication: The iterative investigatory process of finding and removing transfer barriers requires consistent communication and regular meetings to sustain ongoing evaluation and refinement. Sub-group formation along focus areas (e.g. advising, recruitment, and curriculum) to engage in solution-finding with members from both institutions for students has the added benefit of strengthening the partnership through building relationships. These processes yielded new team resources, such as a STEM transfer orientation, program maps, and math and science skills booklets. These new resources can become institutionalized, resulting in structural change aligning the transfer partnership with student needs.

Program Mapping and Clear Pathways: The initial peer mentoring program, funded by STP, has expanded to four other peer mentor programs, and is now being sustainably funded through MESA at Clark College and HHMI. This growth demonstrates the impact of a small-scale initiative and the increasing demand for peer mentoring support. A peer mentor training document is being developed to be used to train future peer mentors. Detailed maps are now hosted on institutional websites, highlighting partnerships and providing information on course enrollment, financial aid, guaranteed admission, and reverse transfer milestones and processes. These maps help students understand transfer requirements and avoid unnecessary courses. The improved program informational resources collectively provide accessible and comprehensive information that reduces student anxiety and confusion.

Creating Connections Across Institutions: Joint advising, faculty, and peer engagement were important to enhanced advising. Direct access for students with potential future four-year advisors and faculty at campus events provides continuity of support, strengthens a sense of united community between partners, and makes the transfer prospect concrete and familiar to students. In addition to informal mentoring from faculty and advisors, incorporating peer mentors improves student transfer expectations and preparedness and future structural changes.

CASE STUDIES | RECRUITMENT & ENROLLMENT

All nine teams within our STEM Transfer Partnerships have focused on boosting recruitment and enrollment in STEM programs through targeted initiatives. To increase student interest and awareness of STEM majors and careers, several 4-year teams organized faculty visits to their 2-year partners, promoting undergraduate research and transfer opportunities. Some teams also organized campus tours to introduce students at their 2-year to their 4-year partner and created dual-branded marketing materials, such as posters showcasing career opportunities. Interactive STEM events such as engineering workshops and rocket launches were designed to ignite students' interest in engineering and related fields. Other teams focused on organizing recruitment events at 2-year colleges to inform students about transferring to 4-year institutions. Additional recruitment and enrollment strategies involved hosting transfer fairs, inviting guest speakers, and engaging directly with students through classroom visits. To further illustrate how teams advanced enrollment and recruitment in STEM programs, we highlight three case studies, outlining the teams' key recruitment and enrollment strategies, their impact on student enrollment, interest in STEM fields, and the insights gained from their experiences.

Columbia Basin College and Washington State University Tri-Cities

Despite not initially targeting recruitment and enrollment as a growth domain, this partnership between Columbia Basin College (CBC) and Washington State University Tri-Cities (WSU Tri-Cities) accomplished a manifold set of changes. Though starting from an Alliance level of partnership, CBC and WSU Tri-Cities nevertheless further interlaced strengths and resources on campus to enrich their broader transfer mission.

Integration of stakeholders: This team emphasized increased communication and collaboration across diverse stakeholders as a key to their recruitment and enrollment successes. They credited prioritization of their work from

school executives as helpful, as well as a high degree of access to one another's students and frequent faculty connections. The partnership also believed engaging faculty from diverse disciplines in collaborative conversations was crucial for recruitment and overall partnership success. Via surveys, the team guided their efforts by soliciting the needs, interests, and intentions of students who were potential participants in their partnership pathway. They also asked questions of CBC students at recruitment events. The survey especially helped devise a timeline for the team's initiatives.

Multi-modal student contact: Informed by data gathering, the team took a multi-modal approach to recruitment and contact with students. They established a foundation of quarterly recruitment events at CBC. These have manifested as WSU Tri-Cities engineering faculty spending the day on CBC's campus, visiting classes in STEM fields, and meeting CBC faculty. The team collaborated to organize a joint WE STEM event. This involved WSU Tri-Cities admissions staff hosting a table on the CBC campus to accept official transcripts and offer students free applications to WSU Tri-Cities. Each of the 11 students ready for this stage who attended the event were awarded a $250 scholarship. Conversely, CBC students visited WSU Tri-Cities to make connections with STEM faculty. This included CBC Mathematics, Enginerineer and Science Achievement (MESA) and TRIO students who were brought to a WSU Tri-Cities networking event. As the partnership progressed, the team centered the importance of CBC students meeting early with the designated WSU Tri-Cities' Bridges Transfer Advisor.

Addressing transfer deciding factors: A primary focus for students assessing transfer to a 4-year school can often be price. The partnership's $250 per student scholarship, while modest, demonstrated a commitment to supporting students and alleviating financial burdens. Within recruitment efforts, the team focused heavily on sharing financial information with students such as scholarships available, misconceptions regarding financial aid, and financial aid literacy. The team also employed a Bridges Transfer program that focuses on ameliorating some of the financial burden of a 4-year degree in three ways. The Bridges program offers free transfer applications and transcript requests to WSU Tri-Cities. It provides guidance on taking courses efficiently to avoid wasting time and money on unnecessary classes. Additionally, it freezes the cost of tuition at the transfer student's first-semester rate for the duration of their time at WSU Tri-Cities. Another transfer deciding factor is concern over the proper steps. To address this, WSU Tri-Cities' registrar disseminated improved messaging on reverse transfer credits, helping students understand they can transfer before completing their 2-year degree.

Initial Examination of Student Outcomes and Stories

In May of 2023, the team administered a survey to WSU Tri-Cities first year transfer students, WSU Tri-Cities TRiO students, students in a WSU Tri-Cities transfer course, and CBC MESA students to assess the strengths and weaknesses of their recruitment and enrollment processes at that stage of the partnership. Students who transferred to WSU Tri-Cities reported receiving support with funding/scholarships, tutoring/study skills, a sense of belonging, and an understanding of transfer credit. The majority of CBC MESA students reported receiving the same support. These findings indicate broad benefits to WSU Tri-Cities' capacity to serve transfer students and the efficacy of their STEM Transfer Partnership work.

Some recruitment efforts had an immediate impact on student transfer interest. Of the 11 students awarded a $250 scholarship at the joint WE STEM event, one student applied to WSU Tri-Cities on the spot, and another completed a Bridges Letter of Intent. WSU Tri-Cities admissions staff also talked with students who were not yet at the application stage and arranged appointments with multiple interested students.

Columbia Basin College and Washington State University Tri-Cities emphasis on targeted recruitment and enrollment strategies has led to a more robust pipeline of transfer students. The team's results highlight the significant gains achievable through strategic planning and resourcefulness.

Centralia College and The Evergreen State College

Centralia College (Centralia) and The Evergreen State College (Evergreen) have collaborated to establish and build a new partnership focusing energies on recruitment and enrollment initiatives as the primary driver to increase the number of STEM transfer students. An overarching central goal has been to create relationships between their institutions at all

personnel levels. In this partnership they have progressed from initial Cooperation to a Coordinated effort involving increased messaging, outreach, and joint events.

Building Relationships through Campus Visits and Events: Faculty from both institutions participated in quarterly tabling events, faculty/student interactions, and transfer fairs. The partnership also included a successful STEM Transfer Visit hosted by Evergreen, followed by a focus group to gather student feedback. To foster community, Evergreen held a pizza party for all current transfer students, providing an opportunity to share their experiences with Evergreen faculty and staff. Additionally, the partnership engaged students at annual "Rising Tide" events at Centralia, where Evergreen faculty served as guest speakers. To further facilitate the transfer process, biannual campus visits were organized to Evergreen in the spring prior to admissions deadlines and in the fall during orientation activities.

Targeted Marketing and Outreach: To increase awareness of transfer opportunities for STEM students, the partnership designed and began implementing a targeted marketing and outreach strategy. The partnership developed this comprehensive plan to reach Centralia students effectively by increased collaboration between the personnel of both institutions. They constructed a dedicated landing page (evergreen.edu/stemtransfer) with pertinent information about transferring to Evergreen's STEM programs, created and placed flyers with QR codes linking to this page across Centralia's campus that promoted the program and its resources. This strategy of focused messaging and outreach to Centralia's STEM students, advisors, and student hubs strengthens institutional ties and simplifies the transfer experience for STEM students.

Creating the STEM Transfer Cohort: The STEM Transfer Cohort was created to strengthen advising partnerships and enhance the appeal of Evergreen as a place to transfer to for a career in STEM. This offers Centralia students pre-admission access to Evergreen advisors and library resources. At the events on both campuses, Evergreen advisors attend to provide direct advising and curriculum planning support for interested students. The goal of this personalized assistance is to increase participation in the cohort by making it more appealing to STEM students at Centralia.

Initial Examination of Student Outcomes and Stories

The Evergreen STEM Transfer Visit proved to be a positive experience, as evidenced by focus group feedback, in which students reported greatly increased interest in transferring to Evergreen referencing their unique offerings and flexibility to incorporate both STEM and non-STEM courses into their degrees. The program also provided early advising and support, as demonstrated by a Centralia student who directly contacted Evergreen admissions after this event who put them in contact with Evergreen STEM faculty. They were able to do direct advising and curriculum planning for the student even before they had applied to Evergreen.

Evergreen's visibility and appeal among Centralia's STEM students grew as a result of the program which they learned from talking with students who attended the various events and from the focus group results. The dedicated landing page provides a centralized source of information for potential transfer students, further enhancing awareness. Looking ahead, the team plans to create a dedicated landing page on Centralia's website to anchor the program with Evergreen's corresponding landing page to increase the opportunities for Centralia's potential STEM transfer students to find the information about Evergreen's programs.

To bridge information gaps, events and targeted outreach address student inquiries about STEM programs, resources, and research opportunities at Evergreen. Students were also engaged in conversations about financial aid options. Building on student feedback about transportation challenges, the team is considering hosting events at Centralia and using Zoom technology to improve accessibility.

The partnership between Centralia College and Evergreen State College highlights the importance of building relationships between faculty, advisors, and students to increase awareness of STEM transfer opportunities for Centralia's students at Evergreen.

Highline College and University of Washington Tacoma (School of Engineering & Technology)

Highline College (HC) and the University of Washington Tacoma, School of Engineering & Technology (UWT-SET) forged a partnership to increase engineering enrollment and transfer rates, particularly for low-income students. The

collaboration evolved from a Cooperative to a Coordinated partnership, with elements of Collaboration emerging. Key strategies included enhanced advising, expanded recruitment efforts, a peer mentorship program, and data-driven decision making.

Peer Mentorship Program: A highlight of the partnership, this program matched HC students interested in engineering with UWT engineering student mentors. Monthly faculty-led events fostered interaction, and mentor-mentee pairs were encouraged to connect independently. Students completed engineering design projects, visited both campuses, and received professional development on various topics such as job interviews, study strategies and communication skills. The program provided valuable support to HC students, helping them navigate the transfer process and build connections at UWT.

Campus Visits and Outreach: HC students were invited to tour the UWT campus, visit engineering labs, and attend research/design showcases. UWT faculty engaged HC students through guest lectures and seminars and transfer fairs providing exposure to diverse engineering careers. Additionally, UWT faculty visited HC physics, engineering and science seminar classes to talk about engineering careers.

Joint Marketing and Communication: The partnership developed shared marketing materials, such as infographics and posters, to promote the transfer pathway. Additionally, both institutions updated their websites to provide clearer information about the engineering programs and transfer requirements.

Excess Credit: The partnership designed a protocol to analyze data and course-taking patterns to identify excess credit occurrences. In support of this and the project as a whole, the partnership established a data-sharing agreement to examine data from both institutions to decrease credit loss and increase the number of engineering students transferring from Highline to UWT. By minimizing credit loss, students are more likely to progress through their academic programs and ultimately graduate.

Initial Examination of Student Outcomes and Stories

The review of excess credit data led to re-advising students in the current academic year and reducing their number of pre-transfer courses, thus reducing excess credits. Data also revealed a gender disparity in excess credits, disproportionately impacting female students. The partnership utilized this insight to further customize their approach to begin addressing this issue. On the transfer advisor side, our recruiter often starts talking about imposter syndrome earlier with women now, since informal conversations revealed their self doubt led to them taking fewer pre-requisites co-currently.

Exposure to UWT through faculty visits to HC, campus visits by students to UWT, guest lectures, and peer mentorship generated substantial interest among HC students in pursuing engineering degrees at UWT. The energy invested in these activities and the faculty gaining insights into the peer mentorship program have led to the improvement of resources for underrepresented students. The partnership has seen increased interest among HC engineering students in transferring to UWT-SET and attributes this to these activities. A HC student exemplifies this impact: initially unsure of himself, he gained confidence and mentoring skills through a summer research program, ultimately leading to helping his peers. From exit surveys, students reported a better understanding of the transfer process and felt more prepared for academic and social challenges at UWT.

The mentorship program consisted of nine HC mentees interested in engineering who were paired with nine UWT-SET engineering student mentors. Five mentees and four mentors were recipients of state and federal financial aid and were first-generation students. Program participants reported feeling more comfortable transferring to UWT-SET after being mentored both in terms of the transfer process and having connections and relationships with people at UWT-SET to whom they could go for help. A high point in the program's success was evident by a UWT student, not part of the mentorship program, heard about and attended an event to explore expanding the mentorship program to other institutions. Multiple mentors have returned for a second year of the mentorship program and some of the new mentors are former mentees demonstrating the value students saw in the program. One student shared, "I loved this program! It gave me more clarity and made me feel like I belong."

The partnership between Highline College and the University of Washington Tacoma (SET) has successfully increased interest for engineering enrollment at UWT, particularly for low-income students, by implementing strategies such as peer mentorship, enhanced advising, and joint outreach efforts. By continuing to work together to address the unique needs of students and provide comprehensive support, these institutions can create a more equitable and inclusive pathway to success.

Key Takeaways | Recruitment & Enrollment

Targeted Outreach & Collaborative Marketing: This included developing shared marketing materials, creating space to showcase the partnership on institutional websites, and conducting joint events. Teams found ways to identify and reach low-income and racially-minoritized students with their early-outreach transfer information. For partnerships in rural spaces or for those whose partner campuses were distant, orchestrating both students and faculty/staff visiting one another's campus was of significant value to help potentially place-bound students explore their options.

Faculty and Peer Recruitment: Teams leveraged faculty as key recruitment champions via their visiting classes, hosting tables with two-year partners on their campuses to answer questions, presenting about career options, and putting on joint events. A team also used student peer mentors as ambassadors for their four-year institution. These student-to-student connections enhance mutual perspective-taking and trust when exploring the potential to transfer.

CASE STUDIES | FACULTY AND CURRICULUM

In eight of our nine teams, a concerted effort was made to enhance curriculum development and faculty collaboration. Faculty and staff from both institutions worked together on curricular development, co-curricular events, and curriculum alignment to strengthen transfer pathways and support students in STEM fields. Some teams focused on curriculum enhancements to increase student engagement and success by integrating research experiences and collaborative learning into new and existing STEM courses and utilizing active learning and project-based approaches. One 4-year institution created a course specifically to set transfer students up for success. Efforts to connect faculty and students included organizing speaker series and receptions, facilitating cross-institutional visits, and expanding undergraduate research internships. Additionally, some teams organized joint STEM faculty events to foster networking and cross-institutional collaboration, including joint campus and classroom visits and collaborative research projects. Other teams concentrated on developing articulation agreements detailing engineering course equivalencies and transfer requirements, facilitating remote learning opportunities for rural students, and creating opportunities for students to collaborate through field trips and virtual lab activities. To illustrate the impact of these initiatives, we highlight three case studies below, detailing key faculty and curriculum activities, their impact on student outcomes, and the insights gained from these efforts.

Central Washington University and Big Bend Community College

Central Washington University (CWU) and Big Bend Community College (BBCC) have collaborated to implement curriculum enhancements focused on transfer students' success, particularly on students from low-income backgrounds. These initiatives include course redesign, joint field trips, and adjustments to major requirements. In the faculty and curriculum domain, the team began at Cooperation level and moved to Coordination.

Course and Lab Redesign: CWU updated gateway chemistry courses to incorporate active learning and project-based learning, aligning with BBCC's CHEM 163 course structure. Quantitative Analysis is a gateway course for Chemistry majors that has had historically higher DFW (Drop, Fail, Withdraw) rates in lecture and lab for transfer students and worse outcomes for transfer students from low-income backgrounds. This redesign aimed to address high DFW rates and improve engagement. The course was adjusted to enhance the learning experience for transfer students by incorporating more hands-on experiences in a flipped classroom model. The lab adaptation included a three-week capstone project in partnership with local industries. This project-based approach aimed at providing transfer students with practical, real-world experiences.

Instrumental Analysis course: The course in which Quantitative Analysis is a prerequisite was also adjusted to

enhance the learning experience for transfer students by incorporating more hands-on, practical lab experiences and a flipped classroom model.

Joint Field Trips and Co-Labs: Coordinated activities between CWU's Environmental Chemistry and BBCC's CHEM 163 included joint field trips for environmental sampling and virtual lab sessions together, facilitating cross-institutional learning and connections among students at BBCC and CWU.

Adjustments to Geology Major Requirements: In response to focus group feedback, BBCC also adjusted Geology major requirements and shifted Physics courses to an algebra-based curriculum to enhance student success.

Initial Examination of Student Outcomes and Stories

Success rates in Quantitative Analysis lecture and lab were tracked, showing improvements in pass rates. For example, the DFW rate for the redesigned course dropped to 0% the first year, which had never been done before. The second year the DFW rate was 17% overall, with the historical average of 25-30%. For both years, the transfer students achieved higher pass rates than previous years and in year 2, higher than their non-transfer student peers. The lab redesign also yielded impressive results, with all transfer students passing, a substantial improvement over historical data.

All low-income transfer students from '22-'24 were successful in lecture and lab. Transfer students in the Instrumental Analysis course achieved a mean score in the 67th percentile American Chemical Society Instrumental test, surpassing the national average. Notably, three transfer students scored in the 96th and 98th percentiles.

Tracking the three-year graduation rates of students who took key chemistry courses, Quantitative Analysis and Instrumental Analysis and, showed high success rates, with notable achievements among low-income students. Nine out of 13 students graduated or were in line to graduate in three years. Out of these, four were students from low-income backgrounds. Four students have gone or are planning to go into advanced study in chemistry, and three of these are transfer students from low-income backgrounds.

A collaborative chemistry lab project with CWU and BBCC students. CWU students traveled to Moses Lake to lead BBCC students in water sampling and field tests. The project concluded with a joint Zoom lab session to analyze water samples. This hands-on experience was met with positive feedback from students, underscoring the benefits of collaborative partnerships that increase connections between students and institutions.

The Central Washington University and Big Bend Community College partnership's successful implementation of curriculum enhancements highlights the importance of collaboration between institutions in improving student outcomes. The partnership has created a supportive environment that empowers students to pursue STEM fields through transfer.

Pierce College and the University of Washington Tacoma, School of Interdisciplinary Arts and Sciences

Pierce College and the University of Washington Tacoma, School of Interdisciplinary Arts and Sciences (UWT-SIAS) program have collaborated to enhance their curricular and faculty initiatives with a strong focus on supporting low-income and racialized minority students. Starting at the Cooperation level in faculty and curriculum, the partnership developed robust curricular changes and interventions building to Collaboration. These innovations included the design and approval of the ENVS 101 course, which is intended to benefit both major and non-major students while ensuring seamless transfer to UWT-SIAS as an elective.

New Course Creation: Core to the efforts has been the development of ENVS 101, an environmental science course that includes a significant laboratory component for active learning through field research experiences. This course not only supports Pierce College's commitment to attracting low-income and underrepresented minority students, but also enhances student engagement in STEM through real-world applications. The curriculum development process involved a substantial investment in faculty resources, including providing an instructor release time for course design and coordinating approval processes across institutions. It also involved utilizing scientific autobiographies from UWT-SIAS students to influence the design of ENVS 101. Field research included Pierce and UWT students collecting soil samples together and sending them to UWT for analysis.

Support Structures and Accessibility Measures: The partnership has implemented several strategies to reduce barriers for low-income students to take advantage of curriculum innovations, such as replacing a course in the curriculum rather than adding an additional class, exploring financial aid opportunities for ENVS 101, and addressing logistical challenges such as transportation to field labs and scheduling all research activities during class time. These measures were vital to ensuring that the curriculum is accessible and that students can fully participate without additional burdens.

Faculty Engagement and Institutional Support: The Dean of STEM at Pierce played a pivotal role in addressing administrative challenges and facilitating faculty engagement. His leadership was crucial in streamlining the course approval process, providing course releases for faculty to develop the new course, and providing stipends for part-time faculty to be trained to teach the course and to work with UWT-SIAS students and faculty. Despite challenges in securing continued engagement from senior administrators, the initiative benefited significantly from the dean's involvement at Pierce.

Initial Examination of Student Outcomes and Stories

Early indicators of success reveal mixed enrollment patterns in ENVS 101 at both Pierce College campuses. In the first year, the course was 50% full at both campuses. By its third year at the Puyallup campus, the course was filling up. However, the Fort Steilacoom campus, despite a successful initial offering, had low enrollment during its second offering of the course, leading to its cancellation. Student engagement surveys show promising levels of STEM identity development among participants, which is crucial for long-term success in STEM fields. By the end of the course, 40% of survey respondents reported that they agreed with the statement "I see myself as a STEM student", and 20% of respondents agreed with the statement "It is important for me to finish my program of studies in science or engineering."

For each factor in the curriculum design, this team was strategic with ENVS 101. The design was based on student feedback and also to fill 4-year major requirements. The course also capitalized on existing resources and activities, and served as an ideally fun and collaborative way for Pierce students to gain familiarity with UWT-SIAS.

The innovative approach of the partnership between Pierce College and the University of Washington Tacoma SIAS program of curriculum design and student support has created a model for enhancing STEM education for underrepresented students. By designing a course that is both engaging and accessible, the partnership has created a pathway for students to succeed in STEM.

Big Bend Community College and Eastern Washington University

The focus of this team was to collaborate to provide students with engagement in the engineering field and with EWU engineering faculty, opportunities for students at both institutions to interact with each other, offboarding modules for BBCC students to help with their transfer process and the coursework needed to allow BBCC engineering students to be junior ready when they transfer. Their partnership level for faculty and curricular efforts started Cooperation and advanced to Coordination.

Engaging in Engineering: EWU faculty and students engaged BBCC students in the annual soldering event and rocket launch. The EWU Electrical Engineering club remotely helped BBCC solder hearts. EWU faculty visited BBCC to help students assemble rockets; then, students visited EWU to launch rockets. After launching the rockets the BBCC students were able to attend both the Electrical and Computer Engineering and the Mechanical Engineering senior capstone project presentations. At the Mechanical Engineering capstone presentations the students were given a "passport" on which they received a stamp from each of the EWU project teams if they asked them a question. Students that turned in a completed passport (all of them) received fun giveaways from the Mechanical Engineering and Technology department at EWU.

Transfer Offboarding: During an in-person convening, the team devised the idea of creating a transfer offboarding process for all BBCC students to streamline the transfer process. They used BBCC's Title V, HEART grant, to create the modules for their students' going to EWU and other main transfer destinations. The pilot will launch in the fall of 2024 for students with over 40 college credits. It will provide a "warm hand-off" to EWU, connecting the BBCC students to people at transfer institutions.

Teaming up for Necessary Coursework: BBCC currently lacks the faculty to teach sophomore-level engineering courses, including the Statics, Mechanics, and Dynamics series, necessary for junior preparedness upon transfer. The team went through the process and paperwork so EWU could remotely offer their series to BBCC students.

Initial Examination of Student Outcomes and Stories

Surveys show that soldering, rocket launching, and engaging with senior engineering students have increased student interest in engineering majors, transferring to EWU, and also provided insights on barriers to engineering majors.

Over two years, 26 students participated in the soldering workshops, and 18 participated in a post-event survey. Surveys showed that 44% and 33%, respectively, were interested in an engineering major or might be interested. It influenced their desire to transfer to EWU: alot (6%), somewhat (39%), slightly (33%), and not at all (22%). A student explained what they got from the event.

> "Even though I was at the event last year, I was much less engaged. This time, I made myself work through every part and asked questions AFTER brainstorming. I definitely improved my problem-solving skills today with the assistance of the EWU team."

The rocket launch event had 13 BBCC students participate in the first year, and over 40 signed up for the June 2024 event. EWU faculty came to BBCC to assemble the rockets, and the art department helped paint them. The students then traveled to EWU for the rocket launch and to engage the ME and EE students and their senior projects. Survey participants from the first year (N=8) showed that 87.5% felt the trip "exceeded expectations." Favorite experiences were the rocket launch and seeing student projects. One student shared,

> "It was SO COOL seeing the rockets launch!! It was also so nice that when I lost my rocket, people were nice enough to help find it. So thank you! I really liked talking to people about their projects as well. I feel like I witnessed something that will affect technology in the long run!!"

From the rocket launch experience survey, 62.5% were more interested in transferring to EWU, and 75% were more interested in pursuing engineering. Participants learned valuable lessons about teamwork, project work, and making their voices heard.

Individual student stories include a BBCC student who transferred to EWU because he was able to meet EWU faculty. The personal connection allowed him to ask questions of the faculty and make it seem possible. Also, a running start student at BBCC was able to take the EWU Statics course. These necessary courses will allow students to transfer and be ready to take junior-level engineering courses.

The Big Bend Community College and Eastern Washington University partnership's focus on hands-on experiences and faculty mentorship has been instrumental in increasing student interest in engineering and facilitating a smooth transfer process. This effective collaboration fosters student engagement, promotes STEM transfer, and provides opportunities for students to explore engineering careers.

Key Takeaways | Faculty & Curriculum

Faculty engagement in STEM events: Campus visits to four-year colleges have shown to provide students valuable experiences, connections to their future major and support network, and insights into the transfer and bachelor's degree process. By inviting faculty from partner institutions into their classrooms, the organizing faculty created a welcoming and supportive atmosphere, fostering a personal connection between students and potential mentors. Additionally, answering student questions during STEM events crystalized students' understanding of and confidence in their future at the four-year partner institutions. The combined impact of these efforts has resulted in a noticeable increase in student interest in transferring to partner institutions.

Innovating in Critical Courses: Faculty implemented thorough changes, including incorporating active and project-based learning and integrating research experiences into new curricula. One team co-created an introductory course, designed to fill four-year major requirements and based on student feedback, while synergizing with other national support programs and academic initiatives on campus. Another team made their four-year engineering course series available to their two-year students remotely. In general, faculty have found that adapting curricula can improve

transfer readiness and pass rates, enhance transfer interest, and reduce time to degree completion.

Curricular alignment: By working closely together, faculty were able to strategically connect their curricula to better serve transfer students. By streamlining courses and preventing unnecessary demands, the team eliminated redundant coursework. For example, ENVS 101 replaced a prior course, and a physics class was changed from calculus-based to algebra-based. To ensure that two-year students were adequately prepared for junior-level coursework, a team developed offboarding modules and facilitated collaborative projects, co-labs, and field trips with four-year students. These experiences, which included collecting soil and water samples, soldering hearts, and launching rockets together, provided students with invaluable connections across institutions, allowing two-year students to experience what courses and students are like at four-year partner institutions.

KEY DRIVERS OF SUCCESS ACROSS ALL PARTNERSHIPS

Building Relationships

Most of the STP team members had not worked together in the past, but through the STEM Transfer Partnership initiative, each participant has worked in connection with deeply invested counterparts in creating supportive partnerships and a generative community of practice. This mutually recognized and enduring intrinsic commitment to students was a nucleation point from which team members propagated interconnected and highly fruitful working relationships. Especially for partnerships built from the "ground up," trust and intentional relationship building have blossomed into enhanced transfer pathways (Wetzstein et al., 2024, p.3).

These healthy working relationships have proved vital for maintaining the momentum that facilitates facing and working through the many encumbrances that could arrest progress toward structural change and student impact. Teams held regular meetings, with some forming specific domain sub-groups. Together, teams co-branded their efforts, invited one another into their classrooms and advising processes, synergized with other student support programs, developed connected curricula, and even launched rockets together.

Via this strong network of team members, students from two-year partners grew meaningful connections with their potential future four-year faculty and peers. For two teams, peer mentors helped further proliferate student-to-student relationships. This web of support guides students through their transition. It cultivates an awaiting sense of community and belonging within their transfer destination. In this way, the investments and commitments of each team member work together to align student trajectories with their goals and potential.

Student-Centered Approach

Driven by their mutual student-first commitment, each team found vital guidance in insights solicited from their students, using many complementary methods. This student-centered approach was a foundational component of CCRI's STP program. It proved invaluable in directing and tuning their efforts to facilitate student outcomes. Student feedback and course data were directly integrated into advising models, allowing for specific adaptations, such as program maps, early advising timelines, and faculty advisor classroom visits to meet students' transfer needs. Curricular design, in some instances, was also based on student feedback. Teams collected student feedback through interviews, surveys and focus groups that examined how factors like academic support and communication with advisors supported their success. Actively engaging in activities to discover and incorporate student voice catalyzed identifying potential barriers to STEM careers and transfer, student knowledge gaps, and specific support services needed. Through this iterative process, teams maximize the reach and impact of their program pathway for students and cultivate sustainable transfer partnerships.

Data-Driven Decision Making

Another core component of the framework of this initiative was that partnerships used data to inform their decision-making and identify areas for improvement. Collecting and analyzing data on event participation, student outcomes, and focus groups to learn about student satisfaction and initiative effectiveness identified crucial foci for impactful change.

Many teams directly surveyed students, some deploying them at the beginning of courses, pre- and post-transfer, and post specific events. One team used students' science autobiographies to tailor their ENVS 101 course. These data sources also allowed for continuous enhancement of recruitment, enrollment and advising strategies.

Additional key insights came from looking at student courses-taking patterns, tracking transfer rates, interest to transfer, as well as reviewing excess credit data, and course-level data on pass rates to see if there were equity gaps for transfer students from low-income backgrounds. A variety of data was used to inform program direction and continuous improvement. Weaving this core element into their programs foundationally built on skills in data collection, analysis and application as an empowering tool for actualizing even more significant student level outcomes. This middle-out data approach saw faculty and staff from each team drive expansion in data capacity beyond business-as-usual for their institution no matter where they started, to include deeper institutional data, state board queries, direct student voice, and, for some, data sharing agreements that enabled integrative insights.

Institutional Leadership

Institutional buy-in is paramount for effective collaboration between teams from different institutions. While sign off by leadership was also a required component of this initiative, the partnerships with active institutional leadership on their team can significantly accelerate the pace of progress. Successfully navigating the unique logistical and bureaucratic challenges faced by each institution necessitated teams to be communicative, consistent, and resourceful. The teams that had chairs, Deans, and Vice Presidents as active participants experienced an advantage in terms of access to institutional resources or levers, which paved the way for expediting data access, new course approval, data agreements, and funding coordination compared to those without.

Resource Integration

Teams employed resourcefulness and vision to weave their STEM transfer-focused partnership with other student support services and strategic campus initiatives to advance transfer student success. The teams secured institutional support by supplementing the STP grant funds with additional funding from other sources to expand their initiatives. This included using internal grants to redesign a course or a lab and to fund student participation in focus groups, and facilitate faculty course release buyouts. Some teams also tied together grants with similar foci in a way that bolstered each other. Teams maximized impact by strategically combining new initiatives with existing programs and leveraging resources effectively. This weaving of resources supports the team's long-term sustainability and effectiveness.

LOOKING AHEAD

Building upon the successes of the STEM Transfer Partnerships initiative, it is imperative to continue fostering strong relationships, maintaining a student-centered approach, leveraging data-driven decision-making, securing institutional buy-in, and integrating resources. These efforts will help to produce student-level outcomes and systemic change that increases successful STEM transfer through inter-institutional partnerships along all STEM program pathways. By doing so, we can create sustainable and equitable transfer pathways that empower students from low-income backgrounds to achieve their academic goals and enter well-paying careers found in STEM fields. The solid foundation established by this initiative can support the growth and development of current and future partnerships in higher education, resulting in a culture of transfer partnerships working together to improve transfer student outcomes.

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CCRI Publications

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About the University of Washington's Community College Research Initiatives
The CCRI team conducts research and development to generate actionable knowledge to advance equity in the field of higher education. CCRI — a program of Undergraduate Academic Affairs — focuses on studying the experiences of underserved student groups that use community colleges as their entry point to higher education and the role that institutions play in equitable student educational and employment outcomes. Their goal is to leverage this research to effect change in postsecondary education at all levels. To learn more about CCRI, visit https://www.washington.edu/ccri/, and follow us on LinkedIn, https://www.linkedin.com/company/ccri-uw/.

About Ascendium Education Group
Ascendium Education Group is a 501(c)(3) nonprofit organization committed to helping people reach the education and career goals that matter to them. Ascendium invests in initiatives designed to increase the number of students from low-income backgrounds who complete postsecondary degrees, certificates and workforce training programs, with an emphasis on first-generation students, incarcerated adults, rural community members, students of color and veterans. Ascendium's work identifies, validates and expands best practices to promote large-scale change at the institutional, system and state levels, with the intention of elevating opportunity for all. For more information, visit https://www.ascendiumphilanthropy.org.

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