EXECUTIVE SUMMARY

The Los Angeles High Impact Information Technology, Entertainment & Entrepreneurship, and Communications Hubs (LA HI-TECH) Regional Consortium was created to support a diverse network of regional hubs across the county. The partnership brings together educational and economic development partners to address emerging needs in career and technical education, skills-based training, and workforce needs of industry, government, and the community.

By leveraging both resources and connections across a vibrant ecosystem, pathway partners engage in a mutual effort to supply a skilled and competitive workforce that contributes to the economic growth of the Information and Communication Technology (ICT) Industry in Los Angeles. Eight (8) Community Colleges will work with sixteen (16) high schools affecting approximately three-thousand six-hundred (3600) students linked to three (3) identified career pathways in ICT.


Pasadena City College serves as the LA HI-TECH Fiscal Agent and the four regional hubs are 1) Los Angeles City College (south hub partnered with Los Angeles Southwest College); 2) Los Angeles Valley College (north hub partnered with Los Angeles Pierce College); 3) Pasadena City College (east hub partnered with Los Angeles Mission College); and 4) Santa Monica College (west hub partnered with West Los Angeles College).

As such, the work of the Careers Ladders Project is in partnership with LA HI-TECH partners across the region to enhance educational and career advancement opportunities for all students. These partnerships provide a powerful base to improve educational and employment outcomes for entry-level jobseekers, professional enrichment opportunities, and the needs of regional employers and labor markets. We foster these opportunities through research, policy initiatives and strategic assistance to colleges and their workforce development.
Community colleges are an effective and central part of a unified approach to workforce development that extends across California - one that is founded on career ladders, universal, seamless, regional, strategic and collaborative. A system of career ladders provides an opportunity for all Californians to attain jobs that provide a living wage and to advance into positions requiring greater skills, responsibilities, and accordingly, higher pays. Employer needs are better met, and workforce and economic development in California is enhanced by the increasing supply of skilled workers.

During the course of building the LA HI-TECH partnership, the need arose to compile an accessible and easy to read resource for guiding career pathways work across institutions, partners, and initiatives. While this binder is not meant as a how-to guide, it does provide a framework for exploring the core elements for career pathways development. As such, this resource serves as a compilation of the broad breadth of work conducted by the Career Ladders Project, but the framework will need to be adapted for the specific context of each partnership.
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INTRODUCTION: Core Elements for Career Pathway Development

Why are career pathways featured so prominently in the K-20 educational field? A sector-based career pathways framework is a set of strategies to achieve universal design through programs of study, increasing access and completion for a wide variety of students. The redesign of college programs of study into robust pathways is promising for California community colleges focused on emerging areas such as the college completion agenda, college and career focused initiatives (CCPT), and Strengthening Student Success Program (SSSP).

Given many reform agendas and issues around the state, it will be strategic for Santa Monica College (SMC) to focus on a particular institutional challenge or problem statement in order to gain institutional support for the further development of pathways. Any of the following examples of institutional challenges would be worth identifying at the outset in order to measure the impact of change: high school to college transition, success rates of basic skills students, numbers of students completing certificates and degrees. Further, structuring and/or re-designing programs of study around the needs of a particular group of students (high school to college, re-entry, veterans, or incumbent workers) or a particular initiative is a good starting place to build from.

Formulating a problem statement around a specific area of impact will be helpful to begin addressing a particular issue important to SMC. Problem statements can be supported with student and labor market data, and a proposed solution anchored to a particular program or industry. Examples of problem statements include:

- low numbers of a specific CTE certificate/degree attainment;
- students who take courses without a particular pattern or path;
- lower than expected numbers of high school students enrolling in the fall after graduation;
- low persistence of students who enroll directly after high school;
- regional skill gaps and identified job opportunities for skilled workers.

In addition, campus and district conditions are critical to the success and uptake of pathway redesign and pathways as a broad theme. To get traction on the work necessary for change, engage critical stakeholders to be a part of the process. These stakeholders include:
Faculty leadership, both instructional and counseling faculty who will be informing and doing the on-the-ground redesign work.

Executive level leaders, including the college President, Vice Presidents of Instruction and Student Services, and Deans who will be allocating time, resources and support to maintain redesign momentum.

 Employers and industry partners, including sector experts who will inform the process through workforce development discussion, competencies, industry certifications, and resources.

Others partners such as K-12 schools and districts, local workforce systems and community based organizations, who are critical to the alignment with community college efforts.

The following sections address the groundwork for success. In CLP’s experience, the development of pathways is progressive work, and, especially at the start, there tends to be uneven efforts/outcomes across each of the pathways elements. This is likely to be true for SMC and across the Los Angeles region, and is worth noting that continued attention to improvement will produce better outcomes.

Section 1: Institutional Buy-In and Support
Section 2: Set Yourself up for Success: The Nuts and Bolts of Pathway Development Work
Section 3: Industry Engagement
Section 4: Fully Integrated Pathways
Section 5: Design Implications for Developing Career Pathways

Reference documents and tools are noted within the document. The selected materials will be useful to:

- highlight the benefits of education and career pathways
- generate support for the pathways framework
- implement pathways design
- expand on the process of developing pathways.
The following national reports support the case for pathway development work and offer more information on the process:

- Career Pathways Toolkit: Six Elements of Success
- Alliance for Quality Career Pathways Beta Framework
- Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century
- The Shapeless River: Does a Lack of Structure Inhibit Students’ Progress at Community College?

**SECTION 1: Institutional Buy-In and Support**

HIGHLIGHTS: Use Data to Identify Skills-Builders, Helping Students Reach Completion flyer, Career Pathways (presentation links)

**Engaging Stakeholders, Building Support, & Catalyzing Change**

The process of developing career pathways requires cross-institutional engagement at all levels. As such, institutional buy-in is necessary to help catalyze stakeholders and garner support across the campus. While CLP recommends a multi-pronged approach to this process, the on the groundwork of finding and cultivating faculty champions is fundamental. These champions will help motivate other stakeholders, while cultivating a sense of institutional change.

We will consider opportunities to experiment with potential pilot demonstration projects, partner with the SMC Center for Teaching Excellence, and engage with Academic Senate leadership in showcasing faculty innovation around pathway work. Creating spaces for senior leadership to commit to the success of pathway development can help create a sustainable strategy for the future. Moreover, it is important to also account for other potential challenges, including the accreditation process, developing a strategic plan, and new changes outlined in the [Student Success Act (SB 1456)](https://leginfo.legislature.ca.gov/faces/billSummaryView.xhtml?bill_id=20192020%2fab1456).

**The Power of Data**

Data can serve as powerful tool in helping students and faculty better understand the opportunities and challenges of career pathway development across classrooms, programs, and institutions. It is important to note that diverse sources of data exist, from case studies to program completion rates to behavioral patterns. The effective use of these data sources can help reveal unique perspectives (and solutions) to common problems faced in career pathway development work. As such, the power of data lies in being able to demonstrate evidence in ways that key stakeholders can understand and
appropriate as part of important discussions on institutional instruction, programs, and policies. The work of identifying data must be aligned with the process of strategizing change in order to facilitate career pathways development across three key fronts: college completion, workforce entry, and institutional success.

**Communicating Value**

Underlying the career pathways work is the mapping process – do not underestimate it! Not only does mapping provide a visual tool for all stakeholders, but also a mechanism for practical and policy-based change. Yes, the process can take time. It will also likely demand a lot of collaborative energy. The beauty of the mapping process is that it allows room for iterative learning and can include faculty and administration at all levels. In order for it to be successful, employers should also be part of the conversation. The vision behind mapping is to rethink and realign existing institutional resources in ways that better meet student needs in the long term. While this work demands focused coordination, supportive leadership, and group accountability, the ultimate goal is building a community of practice that only engages multiple stakeholders, but also helps build excitement and forward progress. Our hope is not only bring stakeholders, but resources across campus in ways that foster opportunities for evaluation, program alignment, and contextualized career pathway development program.

The work around career pathway development requires the engagement of many different people, across roles and departments at the college. Institutional buy-in and support can help catalyze stakeholders and set up the collaboration necessary for success. CLP recommends that SMC take a multi-pronged approach to garnering support across the campus.

1.1 Identify champions and key supporters

To generate widespread support across the institution, find and cultivate faculty champions with enthusiasm for change and the institutional influence to motivate less involved stakeholders:

- pilot a demonstration project and document clear outcomes to win over a larger segment of the campus.
- work closely with SMC’s Center for Teaching Excellence to leverage essential faculty members, particularly those with strong ties to the larger faculty community.
• engage Academic Senate leadership to help in a number of ways, from leveraging the backbone of the faculty to showcasing faculty innovation around pathway work.

1.2 Get buy-in from executive level management to show institutional commitment, catalyze collaboration across departments, and allocate resources for this work

When senior level leadership embrace the process of pathway development, they model commitment to the work and make clear its importance to the larger campus community. Executive level leadership can dedicate resources, support faculty involvement, incentivize instructional design time via release time/overload and champion efforts and outcomes. A proactive approach by administration toward pathway development can generate good will and signal commitment to a long term strategy.

Creating conditions for strong collaborative work across the college sets the stage for resolving or moving forward challenges that live outside of specific departments or disciplines. Teams that come together to work on pathway development might also, simultaneously, be attending to issues around accreditation, advancing elements integral to a strategic plan, or addressing changes outlined in the Student Success Act.

1.3 Use student outcome and industry data to highlight the importance of career pathways

The power of data to shine a light on problems should not be underestimated in the pathway development process: data can bring faculty and administration to the same table and open up dialogue around instructional, programmatic, and systemic challenges. At the same time, data can surface issues that haven’t been recognized and would, because of the silos most campuses work

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1 The Student Success Act of 2012 (SB 1456) is a regulatory change to Title 5 to legislate the implementation of the Student Success Task Force Recommendation 8.2: The Student Success Initiative.

• The Student Success Act of 2012, Senate Bill 1456, was signed into law in September 2012.
• This act targets funding to core services of orientation, assessment, and counseling/advising to assist students with development of education plans.
• The legislation focuses on helping new students define goals and get on track to achievement.
in, continue to be unrecognized. The use of data and case histories is often essential to enlist key supporters from faculty and administrators.

One approach that has been successful on other campuses is to gather and document data on program completion, student exits (CTE course taking patterns without certificate completion), and job placement. Knowing more about the course-taking patterns of SMC students and perhaps zeroing in on the patterns of “skills-builders” (see text box) – students who take only a small number of courses over a short period of time without completing a degree or certificate – could help a pathway working group strategize about where to focus its time and energy in the mapping and development process. Indeed, the dialogue that stems from a collective examination of the data can help a group figure out where change is needed while bypassing the finger-pointing that often accompanies difficult conversations.

The gap analysis is likely to show areas of opportunity: more alignment between programs and workforce, meeting the changing needs of student lifestyle so that more students complete, and helping achieve institutional goals around the Student Success Act.

**Use Data to Identify Skills-Builders**

Skills-Builders are identified as students who take an average of two courses over about two years and do so successfully but do not attain a degree or certificate or transfer to a four-year college. Peter Riley Bahr, from the University of Michigan, studied the course-taking behavior of California community college students and found, among other things, that “nearly a third of first-time students engaged in skills-building behavior” and these students passed the small number of courses they enrolled in at a rate of 94%. While this information is “significant because colleges do not have a consistent way to capture the positive impacts of short-term course-taking, and because this large group is regarded as failing when using the completion yardstick,” it’s also important to note that these skills-building students “increase earnings of up to 15% after taking just a handful of courses in workforce-related fields...” Bahr’s findings and analysis are captured in “What’s Completion Got to Do With It? Using Course-Taking Behavior to Understand Community College Success” and in Kathy Booth and Peter Bahr’s “The Missing Piece: Quantifying Non-Completion Pathways to Success”

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4 Ibid.
For an example of the impact that data can have on program development in the high school transition space, please see this presentation from Long Beach City College: Promising Pathways; the Potential of High School Data to Spur Student Progress.

1.4 Communicate the value of Career Pathways mapping as a process that can support practice and policy change to improve completion rates and increase enrollment, thereby making CTE programs more efficient and cost-effective

In our approach, CLP sees the mapping experience as a process tool that allows faculty and stakeholders to engage in a visual representation of what exists at the college and what elements are missing that would better serve students. Identifying these gaps is a discovery process made easier and richer by bringing a cross section of instructional faculty, deans, and counselors together to talk about aims and room for improvement in the program design. It is very helpful to include adjunct faculty who are industry experts in these conversations. Once internal conversations have been established, SMC will want to bring employers into the conversation and share the work. Acknowledging that the mapping process is iterative – and requires an investment of time and planning – helps to set up all of the people involved in the project for success.

Because the mapping process can be diffuse and slow and because this process of mapping involves so many different stakeholders, it can be useful to keep focused on the goal of increasing rates of student completion. In their article, "Get With the Program: Accelerating Community College Students’ Entry into and Completion of Programs of Study," Davis Jenkins and Sung-Woo Cho say this about the process of working together: “….colleges need to implement a ‘best process’ approach in which faculty, staff, and administrators from across the college work together to review programs, processes, and services at each stage of students’ experience with the college. They must also rethink and better align their practices to accelerate entry into and completion of programs of study that lead to credentials of value. The effect of this organizational redesign process should be to strengthen pathways to program entry and completion.”

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Helping Students Reach Completion
A recent project at Laney College provides a great example of how a study on course-taking behaviors can lead to direct change on campus. A Laney, a full-time faculty member in the English Department conducted research with transcripts of CTE students, searching for students who were just short of A.S. Machine Technology degree requirements. She found that a number of students were only a few units away from an Associate’s Degree because they were missing an English, Math and/or general education Science course. The college, through the persistence of this instructor and others, designed and offered a contextualized “English 1A for CTE” course in Fall 2013. This class, which was held on Friday nights, for primarily working adults, boasted a 100% retention rate. The college has now moved forward in launching a more comprehensive completion program, supporting CTE students in closing the gap toward degree completion.

A flier for the program is available online

1.5 Use “onboarding” activities to engage faculty and departments that you want to bring to the table

To engage faculty and others in the pathway development process – to get buy-in from stakeholders who have been outside of the process – provide visual examples of pathway maps and background about what has been successful in other sectors or in other regions and what the rationale is for doing this work. Bringing together faculty from other colleges who have been involved in similar projects can generate peer-to-peer learning and build interest. Offer presentations about career pathways work and hold professional development or working sessions on contextualizing curriculum across core classes in programs, bridge program development, and stackable certificates. Embarking on one specific project can then build momentum for the college, demonstrating what has been done and the compelling impact.

The presentations below, delivered to a range of audiences, may help in pulling together information on career pathways that you want to disseminate:

“Meeting the Demand of Regional Economies with Career Pathways,” CLP Presentation at the California Community College Association of Occupational Education (CCCAOE) (Fall 2013)
CCCLLI Arts, Media and Entertainment Summit (February 2014)
High Impact Pathways (HIP) Institutes for Design It, Build It, Ship It: Local Demonstration to Regional Integration (May, 2014)
SECTION 2: Set Yourself up for Success - The Nuts and Bolts of Pathway Development Work

HIGHLIGHTS: Sector-based Career Pathway Map, Regional Hub Design Map, Integrated Student Support Services Model

Where to Start?
The key to success is identifying where students will benefit from pathway development. This section addresses the “hard work” of identifying fertile institutional ground to anchor career pathways. In the case of SMC, we start by taking a step back to ask: Where do faculty interest and excitement lie? Who are the “right” people to bring together? What problem can the mapping process take on? In building the infrastructure to support this work, we are looking for opportunities to build out existing resources, explore areas to connect the curriculum and instruction, and extend the pathway toward a potential degree/transfer option.

We will explore opportunities to pilot projects, build momentum, and document progress. Most importantly, the framework for this work is collaborative. We begin by taking small steps, working together to build recognition, and ultimately, expanding efforts that engage teams at the ground-level and support of high-level leadership.

Building Opportunities
At the heart of pathway development work is creating bridges. We find opportunities to overlap and build on the work already supported by many different sources. To do so, we work to identify and leverage existing initiatives with similar goals in order to deepen impact. Support for our work is embedded within educational institutions and extends to federal level grants and state funding, such as the California Career Pathways Trust. Our work impacts students who come to college from various entry points – directly from high school, adult education, other colleges, the workforce. As such, strong partnerships can be created across K12, post-secondary institutions, community based organizations, and industry partners. Our goal is to develop entry points and exit points to diverse college and career pathways.

Sustainable Change
All of this work takes time – the project of creating a robust career pathway demands focused coordination, supportive leadership, and group accountability. We identify the importance of a formal coordinator to facilitate the process, in addition to building a team that includes faculty, counselors, deans, K-12 partners, institutional researchers, and industry. The larger objective is to build a community of practice that only engages multiple stakeholders, but also helps build excitement and forward progress. Moreover, this process takes a lot of patience – mapping a pathway is a messy, but iterative. More importantly, it can be a unifying experience for those doing the on-the-ground work.

In planning the long-term vision for career pathways development, we consider the mechanisms for institutionalizing the process, including the integration of student support services that will improve program outcomes and foster opportunities for student success. This work is premised on building on existing assets, including program resources, educational curriculums, and institutional policies. In order to maintain objectives in the long-term, we will bring exploring how to incorporate additional opportunities for evaluation, program alignment, and contextualized career pathway development program. While the process takes time, once pathway maps are developed, faculty identifies the use of these tools as valuable in various internal institutional review processes.

2.1 Start small and build capacity as you implement the mapping process

Using data, identify a program where students will benefit from pathway development. More importantly, start where there is the will (i.e., faculty and high-level support) to carry out the process. Achieve a “win,” learn from experiences, build recognition, and then, expand efforts to include other programs of study.

To be more specific, identify where the fertile ground is at SMC: where does faculty interest and excitement lie, who are the “right” people to bring together, and most importantly, what problem can the mapping process take on? The Promo Pathway is one area to explore. While the Promo Pathway is currently a short term offering, opportunity exists to build it out, explore connecting instruction to related disciplinary work, and extend the pathway toward degree/transfer.

To build momentum, pilot one project, something with clear time limits and adequate resources, early on in the process. Document the work as it’s happening and monitor the results closely, pulling out data to analyze and then share with others. This strategy -starting small, building recognition, and
expanding efforts at the end - goes a long way in the collaborative process: you engage the team on the ground in meaningful work and use the results of that work to report out to the high-level leadership that supported you early on.

2.2 *Identify and leverage existing initiatives that strive for similar outcomes*

The Career Pathway framework can help organize multiple initiatives with similar goals. Look for opportunities to coordinate efforts to deepen impact.

Pathway development is a genuine opportunity to overlap and build on the work already supported by many different sources, including federal grants and state funding such as the California Career Pathways Trust. Because the successful building out of a robust pathway considers students who come to college from various entry points – directly from high school, adult education, other colleges, the workforce – you can create strong partnerships across K12, post-secondary institutions, community based organizations, and industry partners. The image below describes how sector based career pathways can be developed to include multiple entry points and exit points on the road through college and career.

With SMC’s leadership role in the LA HI-TECH CCPT grant, opportunity abounds to design ICT and Digital Media programs of study at both the local and regional level. This is a strong example of leveraging different initiatives in support of common goals. In reviewing the Regional Hub Design (see following page) CLP recognizes the potential for SMC to delve deeply into pathways
design and delivery. Prospective work includes building out regional interdisciplinary certificates, refining local curriculum, connecting to high school content, defining the preparation that bridges students into accelerated and successful learning, outlining the completion milestones which lend themselves to entry and exit points, and embedding work-based learning so that students gain practical experience alongside their competency-based academics.

2.3 Dedicate resources to make the work happen

Creating a robust career pathway takes time and focused coordination. While at least one administrative leader is essential, success often depends on also identifying a point-person to coordinate meetings and facilitate the process. Without accountability, the process will likely lose momentum.
Identify a point person. Nominate a coordinator to manage the project, a “go-getter” who can make things move, organize the work, coordinate meetings, and facilitate the process. The coordinator need not be someone at a Dean’s level but should be someone able to identify when the work is progressing as planned and adjust when roadblocks get in the way. The coordinator should also have access to and understanding of the data and data sources that are necessary for moving the conversations forward. And because it is important to include counselors and staff from student support services (especially those counselors supporting CTE programs), if the coordinator has contacts in these areas, he or she is even more valuable.

**Establish the “Right Team.”** Build a team committed to academic and career advancement with the willingness to collaborate. The working team should include:

- **Instructional faculty** – Ideally, full-time faculty from CTE departments, as well as English and math, it is helpful to engage faculty that serve on the curriculum committee.
- **Counseling faculty** – Counseling faculty are critical for their knowledge of the student experience and their direct access to students who are in educational planning mode. With a breadth of knowledge about programs, graduation, and transfer requirements, they will be critical contributors to the pathway design process.
- **Dean, Department Chairperson** – It is important to have decision-makers at the table who can advance processes through the system. Having both a CTE Dean and Faculty Department Chair is a particularly significant asset.
- **K-12 Partners** – Often, bringing in High school principals, teachers, and counselors is the step after the core college team meets and addresses a shared vision. K-12 partners should be engaged early on to create fully integrated career pathways that connect K-12 and post-secondary programs of study.
- **Institutional researcher** – Be sure to include someone who can gather the information needed, tend to quality data issues, and help translate aggregate student data so that it is helpful to the larger community of practice.
- **Industry** - If possible get this perspective early on through adjunct faculty, to name competencies, industry recognized certificates, and occupations that students qualify for. A specific sector-based advisory group can also provide this input as the pathway is built out.
Establish a strong Community of Practice (ComP). As SMC embarks on developing pathways in multiple CTE disciplines, roles can get complicated. The Coordinator is an essential player who manages the development process. The many stakeholders needed to engage in the pathway work, all together, are referred to as the Community of Practice; leveraging this larger group helps build excitement and forward progress. In order to move specific disciplines forward, sector-based pathway Working Groups and a Working Group Lead will help to coalesce the narrow bands of work while contributing to the broader work (addressing the problem statement or braiding several narrow pathways into an interdisciplinary set of offerings) focused on by the community of practice. The Working Group Lead is someone who has deep knowledge of the current program of study, systems, and a keen interest in improving them.

Allow time for the mapping process to unfold. The process to map a pathway is messy, iterative, and evolutionary but can be a unifying experience for those doing the on-the-ground work. As the ComP sees graphic depictions of courses of study, industry certifications, jobs and wages, and educational benchmarks over time (through multiple meetings and iterations), they embrace the complicated process of developing their pathway program. Making sure that teams/pathway working groups have time to meet and review new versions of the map, to work through “stuck points,” and to celebrate the changing landscape can provide necessary momentum for a group whose goal, ultimately, is better outcomes for students.

Consider how integrated student support services will improve program outcomes. Take time to explore how other programs and models integrate student support services to improve student success in CTE pathways. Partner with local Workforce Investment Boards, Community Based Organizations, and other social service agencies that can provide students with case management and ties to employment.

The CAAs and Integrated Student Support Services
In an effort to advance institutional change, the Career Advancement Academies (CAA) Initiative, “seeks to rework the system for delivering career technical education by integrating existing services. The framework requires faculty and administrators to work across silos – across the student support services and the instructional side, for example – to provide comprehensive services to CAA students in a case management model.”

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As a way to directly address the gaps between students and student support services, some CAA programs have imbedded tutors and counselors in their contextualized math and English courses as a way to bring critical supports to the populations that can benefit from them. Having the assigned pathways or cohort counselor participate in the faculty team meetings has been shown to be effective in integrating support services with instruction.

One strong example of integrated student support services is the CAA program at Skyline, which offers financial education and coaching for students through their on-campus SparkPoint Center. The SparkPoint Center is one of several key student supports integrated into an online menu of services: http://www.skylinecollege.edu/sparkpoint/

2.4 Capitalize on strengths of existing programs

Rather than setting out to make a lot of changes, assess programs for assets as well as weaknesses. Not only is extensive change often not feasible, faculty and departments are more likely to come on board when building toward their strengths, enabling them to commit to the time that is needed for implementation of change: curriculum design and approval, certificate approval processes through the state level, and aligning content with K-12, to name a few examples.

Some good starting points for building out CTE pathways:

- Involve faculty who work well together, especially faculty across different departments if focused on an interdisciplinary pathway.
- Build on curriculum already in development, starting with this can help manage the long timelines to get curriculum through the approval process.
- Examine the expectations at the entry point of a program that determine student success and completion. Does the program need a bridge into the pathway to provide successful preparation and diversify the student base?
- Link to existing transfer model curriculum (A.A.T. or A.S.T.)
- Use data to determine what’s missing: is there a strong bridge program but no mid-range industry certificate associated with the pathway? Is there a misalignment between industry credentials and what the pathway offers?
2.5 Work towards institutionalizing the process

Plan for sustainability from the start. Since class size is essential to program viability, careful evaluation of student class taking patterns prior to pathway development can help insure critical enrollments later on. It is also helpful to identify if cohort based entry or non-cohort based entry is most appropriate for a particular program and students (using a mix of approaches is possible).

Institutionalization in the context of career pathway development can be approached in several ways. Commonly, institutionalization can describe the process of finding the means of sustaining a grant-funded pathway program once the time-limited funding has ended. In some cases, a cohort-based, integrated pathway program is so successful that it is adopted into the general curriculum and as a “way of doing business” for a particular department or college.

Another approach to institutionalization is to engage in a process of identifying effective elements in various pathway programs. Work toward the uptake of these practices across the broader curriculum, in student success strategies, or through operating procedures at a given college.

The Career Pathway framework and mapping process can become a way to assess, refine, and align programs of study to ensure that education and career advancement are always in unison. Once pathway maps are developed, faculty find them valuable as tools to include in program review and other internal institutional processes.

SECTION 3: Industry Engagement

The Importance of Mapping
It is important to not only build, but to maintain partner engagement. Strong pathway development is responsive to the evolving economy and relevant to employer needs. As such, a careful balance of faculty and industry needs to be maintained in order to develop sustainable relationships in the long term. Pathway development maps are an important to both engage and promote college to career pipelines.

3.1 Have industry partners at the table early and throughout the mapping process.
Industry feedback is critical for maintaining programs that are responsive to the evolving economy. As pathways are built out, industry partners can verify if curriculum, learning outcomes, and certifications are relevant to employer needs.

3.2 **Align faculty and industry partners behind a common, mutually beneficial goal.**

Career Pathway mapping works best when it is a balanced faculty- and industry-driven approach. The balance shifted in any one direction can cause tension between stakeholders. Unifying faculty and industry behind a common goal warrants time and attention.

3.3 **Create relationships with local Workforce Investment Boards and deepen relationships with industry or sector leaders.**

Institutions that have limited time, resources, and social capital to create new or deepen relationships with industry leaders should seek outside assistance. Use these relationships to increase work-based learning opportunities - work experience, internships, part-time employment, project-based learning - for all students.

3.4 **Use the actual pathway map as a tool to engage industry stakeholders.**

Colleges had success in using a developed career pathway map to start conversations with employers. The map helps employers visualize how their feedback is important for creating a pipeline from college to career.

**SECTION 4: Fully Integrated Pathways**

HIGHLIGHTS: Partnership Self Assessment Tool, Examples of Pathway Maps

**Pathway Development: A Two-Way Path**

Working across the K-16 system means building out opportunities that feed into the high school and extend beyond the community college. Preparing students is a responsibility that needs to be shared at all levels in order to prepare students with the skills necessary to enter and succeed in both college and in their careers. While aligning K-12 and post-secondary programs is not impossible, there will be challenges. It is important to promote academic and career opportunities for students that need it most. This is where the importance of data...
comes in – identifying and assessing transition data effectively can help inform discussions with institutional leadership from high schools to school districts to colleges.

The work of CLP is to help guide college faculty, counselors, and administrators alongside their counterparts from the K-12 system to not only assess, but also clarify objectives and potential opportunity gaps. In this process, mapping career pathways helps facilitate professional learning across institutions. This process begins by taking an inventory of resources that already exist, building a network of cross-institutional relationships, and collectively creating a visual representation of the process. In developing a pathway framework, we advance our work in teams and guide the conversation with leadership.

**The Role of Universities**
The mapping process also extends from community colleges to institutions granting four-year degrees. It is necessary to create bridges that enable the possibility of both transferring and attaining a Bachelor’s degree. Career pathway development includes a wide spectrum of entry-level programs, AA/AS degrees, and clear transitions to four-year schools. Backwards mapping, from the requirements of a particular BA/BS program to a CTE, can help ensure a seamless transition for transfer students.

**Regional Workforce Alignment**
Collaborations can take place across community colleges and expand across the region. In doing so, career pathways can be developed to meet the needs of both students and employers in ways that align existing programs to the needs of specific industries. This type of approach promotes new opportunities to build industry-based skills, articulation agreements, and regional economic development.

Understood as a region, community colleges can work in partnership to strengthen industry-based offerings at advanced certificate levels. It is important to note that articulation is only one potential tool and new opportunities can be explored to leverage mechanisms that state student-learning outcomes (i.e. C-ID, student competencies, industry recognized certificates). The process of designing education systems at the regional level is a key opportunity to build on the strengths of specific college CTE programs.

**Fully Integrated Pathways**
While the work around pathway development often begins at the community college, it’s important to build out the pathway in both directions: high school
learning that leads to post-secondary work, and transfer opportunities that extend beyond the community college.

4.1 Extend career pathways to span grades K-16.

Post-secondary and K-12 systems have a shared responsibility to prepare students with the skills necessary to enter and succeed in both college and career. Aligning K-12 and post-secondary programs is a monumental, but achievable, challenge that will promote academic and career advancement opportunities for students that need it most.

Deepening relationships across the K-16 system allows all of the partners to capitalize on various systems’ strengths and to offer support where gaps exist. To help unite systems and system leaders, assess local student transition data and use that to motivate deliberate discussions between executive leaders. The objective is to engage high level leadership (Chancellors, Superintendents, Presidents, Principals) around common data sets and get them to name and agree to inter-system goals, followed by naming staff to lead the effort. At the implementation level, pull together college faculty, counselors, and administrators with counterparts from the K-12 system to assess what exists and clarify the goals and gaps. CLP's Self-Assessment tool can help facilitate the discussion with these groups: Self-Assessment of an Effective Community College/K-12 Partnership.

Mapping career pathways can be the process tool to unite the discovery and set an agenda and work plan for what needs to happen between systems. In the mapping process, begin this work in any CTE discipline by taking inventory at the kinds of opportunities - shared course content, bridge programs, summer experience, work-based learning opportunities - already exist for students in the K-16 continuum. Use a retreat/series of meetings to establish relationships, bring disciplines together (e.g. K-12 computer science teachers with college IT and Media Arts faculty) to sort out the different pieces of the existing pathway, asking participants to collectively create a visual representation of what currently exists. In this way, the pathway framework is being built on assets, even if those assets aren’t yet connected. CLP’s Enhanced Form C can be used to guide the conversation and to document the work.

During this process, it is common to reach a point where what is mapped needs to be examined. Most often, as the mapping work progresses, the working group decides to represent what currently exists as well as what is in formation. In earlier work, the map reflects noticeable gaps and as the working group
closes those gaps (e.g. creating a mid-level certificate or a dual enrollment course), they choose to show a more robust pathway, even if some of the work is in process. In several of CLP’s mapping projects, the teams have illustrated their pathways with a bridge and three “levels” of movement through the community college pathway. See maps from Contra Costa College, Skyline College, and East Bay Regional Transportation and Logistics work (through the TAACCCT Design It Build It Ship It grant) for examples.

Universities
A significant part of Pathway development includes creating systems that encourage students’ advancement to Bachelors’ degrees and documenting the clear transitions from CTE at the community college to four-year schools. Ideally, part of the process of developing a career pathway that spans an entry-level bridge program to the attainment of an AA/AS degree or ability to transfer to a four-year institution will include conversations with key representatives from the CSU or UC system in the targeted sector. Backwards mapping from the requirements of a particular BA/BS program will ensure a seamless transition for the transferring community college student as well as generate increased interest on the part of the four-year school in students coming out of SMC.

For example, in the East Bay Regional Transportation and Logistics inventory, CSU Maritime and CSU Easy Bay are named. The two CSU campuses are working with a regional consortia of community colleges in the East Bay to align programs in Transportation and Logistics. Through this alignment effort, students obtaining a Certificate of Achievement or AS Degree in Global Trade or Supply Chain Management are able to move seamlessly into a Bachelors of Science in Business at CSU Maritime or CSU East Bay, respectively.

4.3 Collaborate regionally to create a comprehensive set of career pathways that align with high demand sectors.

Colleges can collaborate within a region to (1) take an inventory of existing programs, (2) look for strengths and gaps across programs of study, and (3) create strategies to align and redesign programs that meet the needs of students and employers. Regional collaborations are effective ways to meet the skills gap that specific industries identify.

Regional alignment in the context of community college to community college, and crossing district boundaries benefits both employers and students and allows for the portability of earned credentials, increased access for incumbent
workers to skill up, and for industry to truly see community colleges as a well-knit web essential to the economic development of a region.

In regional pathway work, it is possible to design regional systems of education and training to build on strengths of specific college CTE programs. Conjoint certificates, where colleges offer and recognize each other’s courses to address scheduling and geographic challenges is one area of potential. Additionally, colleges offering programs within the same sector, can often build on complementary strengths. For example, a student completes a particular certificate at College A and through articulation with another college in the region, that student can enroll in a mid-level or advanced certificate at College B. The student in this example is ‘transferring in’ with recognized competencies and achievement so that they don’t have to restart or lose efficiency. In order for this process to have some success, faculty across colleges/region need to meet, discuss their programs and offerings and identify some unifying element upon which students’ abilities can be measured. Leveraging mechanisms that state student learning outcomes like C-ID or student competencies like industry recognized certificates are some of the possible ways to do this.

SECTION 5: Design Implications for Developing Career Pathways

HIGHLIGHTS: Self-Assessment for a Campus-Specific Pathway, Career Pathway Bridges, Certificate Programs, Integrated Pathways, Stackable Credentials, Work-Based Learning Continuum, Using Data

Building Bridges
In redesigning existing programs, the pathway working groups can build on existing strengths and develop future plans for implementation. The resources provided here are not meant to be exhaustive, but rather provide a framework for working groups to take ownership of the pathway development process.

There are diverse types of bridge programs to effectively engage student learning and entry into CTE pathways. It is important to consider student needs, specifically, how educational resources can be used to better prepare youth and adults with limited basic skills and barriers to employment. Effective integration of support services, workforce agencies, and classroom learning can help improve opportunities for student success. Pathway programs should provide a wide spectrum of sequenced entry points to access certificates, transfer opportunities, and academic degrees (and also the option to exit).

Contextualized Learning
The integration of life and work through learning helps students build core skills for specific occupations. Here, students are not only offered an opportunity to gain industry-based knowledge, but they also learn and apply basic skills in the classroom. Contextualized learning can serve as a foundation for students to learn English and Math, while reinforcing applied industry knowledge.

Our mission is to help create opportunities for students to learn context specific skill sets alongside building their own capacities to advance professionally. Contextualized learning should be an integral part of stackable programs and be closely aligned to the direct needs of industry. It is imperative that the design of course sequences is not a barrier to completion.

**Work Based Learning**

Pathway development work is most effective when aligned with industry needs and integrated to existing resources across educational, community, and workforce institutions. Our goal is to remove barriers for student entry together with providing supports for student success and responding to industry needs. This is a dynamic process that requires the continual engagement of pathway development partners. Work based learning provides opportunities to engage industry partners in the curriculum, student preparation, and mentorship in ways that can help students secure better wages and additional professional opportunities.

Work based learning helps students gain experience in the classroom that enables them to be part of a skilled labor force. Structured opportunities to gain applied experience work experience, from internships to work experience to service learning, can help students enhance their marketability as future employees.

Our broader vision is to foster community and economic development, while bridging opportunities for students that historically have the least access to higher education. In doing so, we bring together key stakeholders, mapping tools, and data to support the comprehensive redesign of our educational system.

**Design Implications for Developing Career Pathways**

Once the climate is set, goals are articulated, and work groups are in place, the following section highlights key elements to consider and include in the redesign of a program of study into a robust pathway. The active work of the Pathway Working Group is to determine how the current program of study can address each of these elements in an impactful way. It is pragmatic to build on
strengths and areas that already exist and phase in what is ‘doable’ in time increments to meet the additional elements. Discerning this can be part of the working groups charge once they take ownership. Partnerships can be key to the success of design and implementation and also bring beneficial resources. The following list is comprehensive and as SMC evaluates its progress toward pathway goals, this list can be used as a reference. CLP’s Self-Assessment for a Campus-Specific Pathway will be a useful handout in this context.

5.1 Include on-ramps or bridge programs for underprepared students with limited basic skills and youth and adults with barriers to employment

Bridge programs create a learning experience for students to successfully prepare for entry into a CTE program. Often, they include approaches like cohort based instruction and linked courses, as well as contextualized learning environments so that students can pursue CTE programs while they improve their literacy and numeracy skills. Developing a bridge can be driven by a college’s desire to diversify a program of study and help improve success rates. Robust bridge programs offer integrated support services often in partnership with community based organizations or workforce agencies, a cohort model, contextualized courses and career exploration in the relevant pathway/sector. For further reference:


5.2 Include programs that span the entire range of programs from entry level, intensive “bridge” programs through occupational certificates, transfer, and academic degrees.

Striving to provide a full range program that spans entry level certificates to degree and transfer is an effective strategy to get students to start a career, participate in continuous education and advance in their workplace through the achievement of certificates and degrees. While evaluating the program of study for these criteria, mapping can often provide a visual representation of where the gaps in current offerings exist. If possible, offer a full array of course offerings which align with opportunities for occupational advancement within a
sector, including identifying a relevant transfer major(s) and institution(s). Structuring programs sequentially with clear transitions to the next opportunity will set students up for success in career and education. For further reference:

- **Certificates: Gateway to Gainful Employment and Colleges Degrees.** Anthony P. Carnevale, Stephen J. Rose & Andrew R. Hanson, Center on Education and the Workforce, Georgetown University, 2012.
- **Pathways to Success: Integrating Learning with Life and Work to Increase National College Completion Report to the US Secretary of Education, Advisory Committee on Student Financial Assistance, 2012**

### 5.3 Design programs that are stackable in design with certificates “nested” in longer transfer and degree structures, always preparing for the next step

Stackable programs are best developed in close collaboration with industry experts who can speak to skill sets, the vertical mobility of career pathways and the lateral points of opportunity into related careers. Stackable programs or certificates offer students natural entry and exit points along the career, capture a completion for both the college and the student, and enable a student to: (1) step out to pursue employment/take care of life responsibilities, (2) enter employment and continue in the program of study, (3) re-enter a program from where they stepped out so that they don’t lose progress or have to start over.

Key to this element is to package and schedule offerings so students can gain skills in the shortest time possible; consider redesigning so that course sequences are not a barrier to completion. Package courses in ‘sets’ culminating in a certificate for the skills needed to enter employment at entry-, mid-, and advanced-level occupations. Sometimes changing the order of course sequence instead of significant curriculum redesign can make a big difference. Stackable design is an area where student data, course taking patterns, and exit data in particular, can give clues about potential exit points if students are not completing programs because they are getting jobs. For further reference:

5.4 Contextualize foundational skills to the knowledge and skills needed in a specific occupation or group of occupations

Offering contextualized foundational skills in pathway programs accelerates student learning in math and English while reinforcing the industry content they are learning. Sometimes contextualized courses are linked and coordinated so that faculty share themes and assignments between classes. Students entering a bridge program with contextualized basics skills could potentially avoid getting caught in the long basic skills sequence and enter into college level work more quickly.

- **Contextualizing Adult Education Instruction to Career Pathways.** Career Ladders Project, Jobs for the Future, Literacy Work International, 2013
- **Facilitating Student Learning Through Contextualization.** D. Perin, Community College Research Center, Teachers College, Columbia University, 2011 (though not posted on CLP’s website, the electronic version has been included on the provided flash drive under Section 5 Resources).
- **Effective Basic Skills Instruction: The Case for Contextualized Developmental Math.** C, Wisely, PACE Policy Brief, School of Education Stanford University, 2011

5.5 Provide an effective framework for workforce development by aligning with industry needs and integrating the resources of community colleges, other educational institutions, workforce agencies, adult education programs, social service providers and other stakeholders

Implementing the broadest set of pathway strategies maximizes the benefit to students not only in removing barriers and offering streamlined industry responsive training that is college credit-bearing, but also provides the necessary supports for students to succeed. Such a feat requires intentional collaboration and coordination among service institutions and resources in the community, many of which include the above mentioned institutions. For further reference:

- **Beyond Basic Skills: State Strategies to Connect Low-Skilled Students to an Employer-Valued Postsecondary Education.** Marcie Foster, Julie Strawn & Ellen Duke-Benfield, Center for Postsecondary and Economic Success, CLASP, 2011.
5.6 Engage employers actively in pathway development, worksite training, internships, and placements

Ongoing employer engagement in meaningful ways will ensure that pathway development is aligned with industry needs and that students have access to work based learning opportunities. Industry are willing partners in contributing to curriculum, teaching, project based learning, work-based learning, employment opportunities, workforce preparation, and mentoring. Some regions are working with establishing intermediaries to broker the involvement of employers and make gains on increasing the scale of involvement. The importance of local relationships remains important. Please see section 3: Industry Engagement for further discussion. For further reference:

- **Employers, Low-Income Young Adults, and Postsecondary Credentials.**
  Maureen R. Bozell & Melissa Goldberg, Workforce Strategy Center, October 2009.

5.7 Focus on careers in demand that provide family-sustaining wages and ongoing advancement opportunities as confirmed by industry partners

Offering training for careers in demand is an economic and social imperative. Focusing on high demand, high skill, high wage jobs increases opportunities for all local people, and is especially impactful with low-income populations. The universal design of pathways and the elements discussed in this document, when done well, have the most impact on those who are historically underserved in our educational system. “The best anti-poverty program is a world class education.”7 Use the best tools available to demonstrate labor market demand and insights from regional industry partners to support a strong case for redesigning a particular program of study. Labor market data will also help identify which careers in demand have family sustaining wages. For further reference:

- **Putting the East Bay to Work: Sustainable Jobs for the Underemployed.**
  Cassandra Benjamin & Sara Kimberlin, East Bay Community Foundation, September 2009.

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7 President Barack Obama, 2010 State of the Union speech
5.8 Include work based learning opportunities through structured experiences which could be credit-based and/or paid work experience, internships, or service learning

Work based learning opportunities are key experiences for student success in career pathways. They help students understand the context of the career, build experience that can be included on resumes, and develop personal effectiveness and work readiness skills like teamwork and critical thinking. Packaging Cooperative Education community college courses with a program of study provides students with the opportunity to earn credit in a supervised work experience. Job shadows, internships, and part-time employment in occupations related to the program of study are significant ways to boost students’ acquisition of skills as well as increase their employability.

The table below outlines a continuum of Work-Based Learning across K-14 grade levels, with age appropriate activities specified by elementary, middle, high school, and community college.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Elementary School</th>
<th>Middle School</th>
<th>High School</th>
<th>Community College</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4-5</td>
<td>6-8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Activity Appropriate to Developmental Stage</td>
<td>Building knowledge of Neighborhood, Community, Town Curriculum</td>
<td>Building knowledge of Occupations and sector-driven clusters, Maker’s Fairs, 4th grade field trips to a CC, 5th grade field trips to CSF or UC;</td>
<td>Guest speakers, “Take your Child to Work” activities, video, research integrated into academics, informational interviews; Maker’s Fairs</td>
<td>College and Career Planning (10 year); Career research skills, cloud based career center technology through Naviance and Career Cafe</td>
</tr>
</tbody>
</table>

| Work Based Learning Continuum | Career Awareness | Career Exploration | Career Preparation: Practicum and Internships | Career Training and Employment |

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For further reference:
Work-Based Learning in California: Opportunities and Models for Expansion.
Svetlana Darche, Nara Nayar & Kathy R. Bracco, WestEd, November 2009.

5.9 Use and promote data and focus on continuously improving outcomes

For discussion on data use for pathway development please refer to Section 1.3. For further reference:


REFERENCES


http://archive.careerladdersproject.org/docs/Putting%20the%20East%20Bay%20to%20Work.pdf.


RESOURCES

Self-Assessment of an Effective Community College/K-12 Partnership. 