Access to Opportunity:

Using Preapprenticeship Programs to Connect to Registered Apprenticeship

A BRIEFING PAPER FOR THE CALIFORNIA
APPRENTICESHIP INITIATIVE EVALUATION

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Acknowledgements

About This Brief

This brief is part of SPR's evaluation of the California Apprenticeship Initiative. The evaluation includes four case studies and a pre-apprenticeship brief, which can be found at:
https://caihub.foundationccc.org/Research-and-Reports

Creating Access to Opportunity: Using Pre-Apprenticeship Programs to Connect to Registered Apprenticeships

EXHIBIT 1.
California Apprenticeship Initiative Overview

Inception:
2016

Apprenticeship Grantees:
35

Participants Served:
2,619

I. Introduction

Apprenticeships have recently garnered attention in policy circles because they benefit both employers and apprentices in ways that other types of job training do not. Employers gain skilled workers at the end of the training and, during the apprenticeship, apprentices are contributing to the productivity of their employer organizations.[1] Further, since employers are providing the on-the-job training (OJT) component of apprenticeships, they can better ensure that the training meets their needs. Apprentices benefit because they gain skills and work experience, do not have to pay tuition for their classroom training, and are paid by their employers.

An explicit goal of the California Apprenticeship Initiative (CAI) is to increase access to the opportunity of apprenticeship for all Californians by (1) expanding the number of registered apprenticeship (RA) programs in California and (2) ensuring that dedicated pre-apprenticeship (PA) programs are developed to connect individuals traditionally underrepresented in RA programs with the training, support, and connections they need to become apprentices. To these ends, between 2016 and 2018, the California Community Colleges Chancellor's Office (Chancellor's Office) invested $15 million to develop new and innovative PA programs across the state to help increase the diversity of RA programs.

Note: Pre-Apprenticeship grantees include awards in 2016, 2017, and 2018; Participant total includes awards in 2016 and 2017.

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1 See Robert Lerman (2014), Do firms benefit from apprenticeship investments? IZA World of Labor, 55 (retrieved from http://wol.iza.org/articles/do-firms-benefit-from-apprenticeship-investments-1.pdf).

PA programs are exactly as their name would suggest—they serve to prepare potential apprentices for admittance to RA programs by providing training, support, and linkages to those programs. They assist individuals with meeting the industry or trade-specific prerequisites for RA program entry—prerequisites that can present formal barriers to applicants such as ex-offenders or high school dropouts. More informally, PA programs can also help certain groups, such as women or people of color, who are traditionally underrepresented in sectors that commonly utilize RAs—including construction and manufacturing—to overcome any feelings that those industries or RA programs do not welcome them. These barriers present real challenges to expanding the scope of RA programs in California—for employers, industries, and potential apprentices.

As California invests in dramatically increasing both the total number of apprentices and the kinds of occupations that utilize apprenticeship, a clear pipeline of potential apprentices is needed. This is why the Chancellor's Office, along with many of its education and training partners, is invested in finding ways to grow and support pathways for potential apprentices, especially for women, people of color, foster youth, ex-offenders, veterans, and other underrepresented groups. Robust PA infrastructure is one such pathway that is integral to fully realizing the broader joint vision of the state's workforce and education entities for having clear career pathways—with multiple onramps for all residents—that align to regional sector partnerships, including and especially RA.[2]

Since the Chancellor's Office began its investment in PA programs in 2016, California's Employment Development Department (EDD) has released guidance for how local Workforce Development Boards (WDBs) can support RA and PA programs with Workforce Innovation and Opportunity Act (WIOA) funds. In fall 2018, the state legislature passed AB 235, which requires the registration of PA programs that include formalized linkages to state-registered apprenticeship programs. These state-level policy developments indicate that partners are also exploring the opportunity for economic development, workforce, and educational organizations to support formalized pathways to RA as a strategy for developing and maintaining a competitive workforce.

To date, CAI has made 35 grants to support PA programming. Eight grants were awarded in 2016 (Round 1), fourteen in 2017 (Round 2), and eleven in 2018 (Round 3). These investments provide real, actionable information to the broader community of stakeholders for designing and implementing strong PA programs that provide real pathways to RA. To support this learning, the Chancellor's Office contracted with Social Policy Research Associates (SPR) to conduct an evaluation of CAI's implementation and early outcomes. This briefing paper on PA programs was developed based on data collected as part of this evaluation.[3]

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2   See EDD Directive WSD16-07, "Regional and Local Planning Guidance for PY 2017–2020" (https://www.edd. ca.gov/jobs_and_training/pubs/wsd16-07(acc).pdf) and EDD WSD18-01, "Regional and Local Plans PY17-21—Two Year Modifications" (https://www.edd.ca.gov/jobs_and_training/pubs/wsd18-01.pdf).

3   The primary data sources for the evaluation findings are interviews with apprenticeship program staff and RA partners, a participant survey, document review, and a pre-apprenticeship site visit. Appendix A describes these data sources and the evaluation methods in more detail.

Early Outcome Findings

- **CAI PA program participants are more diverse than RA participants in California overall**. CAI PA grantees were particularly successful at recruiting women and Black participants. While only 6 percent of California registered apprentices are women, 27 percent of CAI PA participants have been women. Statewide, 7 percent of registered apprentices identify as Black, compared to 11 percent of CAI PA participants.

- **CAI PA grants have primarily served the building and construction industry**. Over half of CAI PA grantee programs (20 of 35) have pathways to RA in the building and construction trades; statewide, 70 percent of RA programs are in building and construction.[4]

- **CAI PA grantees have been successful in securing connections to RA programs, including agreements to offer PA program completers advantages in the application process**. In addition to success in connecting PA participants to RA opportunities in the building and construction trades, grantees with connections to advanced manufacturing, automotive, IT, hospitality, and firefighter RA programs leveraged preferential agreements with their partners to afford PA participants a variety of advantages in the application process. This includes guaranteed interviews, application points, and RA credit for credentials and training attained during PA programs.

- **CAI PA grantees help students connect to non-RA pathways, such as other employment and work-based learning opportunities as well as continued education**. Grantees reported that students who did not continue to RA programs from PA did achieve other positive outcomes, such as continued training at the community college and other training-related employment.

Implementation Findings and Lessons Learned

- **CAI grants provide value to RA programs by recruiting, screening, preparing, and supporting a diverse pipeline of applicants**. While program design varied significantly along aspects such as length of training, specific supportive services, and kinds of technical training offered, all programs provided value to RA partners by introducing new, qualified candidates to their applicant pools.

- **CAI PA programs are tailored to address specific RA pipeline issues and remediate specific barriers their target populations face in successfully applying to RA programs**. Whether a PA program partnered with one RA program or many, those that were successful were tailored to address specific RA pipeline issues around recruitment, application, and persistence, as well as the specific barriers faced by target populations.

- **A lack of RA programs in non-construction industries limits the kinds of PA programs that can thrive**. By their very definition, PA programs need RA programs with which to connect. CAI PA grantees that initiated their programs without an RA partner already in place—especially in industries outside of construction—were challenged to connect with local RA partners because often such opportunities did not exist.

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4   For apprentice statistics, see California Department of Industrial Relations (2016), State of California Department of Industrial Relations Division of Apprenticeship Standards: 2016 Legislative Report (https://www.dir.ca.gov/DAS/reports/2016LegReport.pdf).

- **Partnerships with RA partners require trust and take time to build**. Many grantees leveraged long-term relationships with local RAs and employers to kick-start their PA programs. These relationships and the trust between employers/unions and training partners facilitated effective program design and ultimately the transition of PAs into RA programs.

- **Offering credentials and technical training confers benefits to all PA participants, including those who do not become registered apprentices**. Offering credentials and technical training gives PA participants who matriculate to RA programs advantages once they start their apprenticeships, including credit towards apprenticeship hours or expedited placement at job sites with specific credentialing requirements. It also gives those who do not become apprentices industry-recognized credentials that help them find work in related employment.

**Recruiting and screening
underrepresented participants**

- Young people
- Women
- Ex-offenders
- People of color

**Providing remedial education
and support services**

- Career exploration
- Academic remediation
- General life stability

**Delivering technical skills
and training**

- Technical skills
- Hands-on experience
- Certifications and credentials

**Connecting participants to registered
apprenticeship and other opportunities**

- Registered apprenticeship
- Employment
- Further education and training

II. Pre-Apprenticeship Program Structure

Pre-apprenticeship programs exist all over the country and have been around for decades,[5] primarily serving to link high-barrier and underrepresented groups to the construction trades. Driven by demand for more diverse and robust pipelines, PA has traditionally been a partnership of RA programs (which have a demand for motivated, entry-level labor they can train) and entities with access to potential applicants, such as community-based organizations, probation and parole offices, workforce boards, and schools. These community partners then work to recruit, screen, and prepare potential candidates for the specific demands of their RA partner(s).

Common issues that PA programs respond to include the need for local talent to comply with local hire ordinances,[6] the need to increase women on the job to meet Equal Employment Opportunity (EEO) law, and the need to promote and diversify pipelines more generally so there are adequate numbers of individuals flowing into apprenticeship programs. PA programs are designed to respond to these issues by recruiting participants from these groups (along with more general recruitment) and providing them a core set of services that prepare them for admittance to RA programs.

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5   See, for example,
     https://files.eric.ed.gov/fulltext/ED507767.pdf
6   Local hire ordinances require contractors and developers benefiting from the use of public funds—such as those receiving contracts to build public works—to utilize the labor of local residents.

Since PA programs are designed to meet the specific needs of RA programs and to remediate the specific barriers faced by potential apprentices, programming can look very different from site to site. However, as referenced in Exhibit 2, all PA programs generally provide a core set of services:

- **Recruiting and screening underrepresented participants for work** in a specific industry or occupation. Policies such as EEO and local hire can drive demand for certain populations, but many RA programs also need assistance to generally source the next generation of membership.

- **Providing remedial education and support services for participants** who face educational, economic, social, and physical barriers in applying and being accepted to RA programs. Remedial education and support services are designed to help PAs become apprenticeship-ready in a variety of ways: logistically (childcare, transportation, equipment), scholastically (GED, able to pass and score competitively on RA application assessments), mentally (ready to work), and physically (able to pass RA-mandated physical tests).

- **Delivering technical skills and training** that prepare PA participants for RA programs, for entry-level work in similar fields or occupations, or for further education. While RA programs are designed to provide in-depth, long-term training for apprentices, PA programs provide hands-on experience and entry-level classes, coursework, and credentialing. This experiential technical training provides participants with a realistic idea of the occupation and industry they are pursuing as well as with the training and credentials they will need to be competitive in the RA selection process.

- **Connecting participants to RA programs**, work-based learning, further education and training, or related employment. PA programs provide linkages to RA programs, often with preferential consideration or other application advantages. PA programs can also help successful completers who do not choose to pursue an RA to leverage their training to connect to other desirable outcomes, such as internships, employment in a related field, or more postsecondary education and training.

As stated above, PA programs are designed to meet the needs of RA partners and solve specific pipeline problems. For CAI grantees some of the problems faced by their RA partners include: not getting enough applicants from underrepresented groups; not being able to find entry-level talent with specific certifications and skills; not being able to find apprentices who are able to persist through a two- to four-year RA program; not having enough candidates who can pass the RA assessment exam; or simply not having enough qualified applicants to fill available apprentice slots. As each CAI PA program is designed to respond to the unique needs of its RA partners, program design ultimately emphasizes one or more of the above core elements. The below sections detail the variation experienced by CAI PA grantees across each element.

Implementation Findings and Lessons Learned

PA program design across CAI grant sites varied by how much emphasis was placed on recruiting—that is, finding and attracting potential apprentices—versus screening for fit. Both aspects are important functions of a PA program, but different RA programs have different needs. On one end of the spectrum, several CAI PA programs were almost exclusively focused on promoting an RA partner's industry and opportunities for careers within that industry, including apprenticeship. For these RA partners, the primary stated value of the PA program was that it increased the total number of qualified applicants pursuing apprenticeship (and other employment) opportunities in the field. Some sectors, like manufacturing or fire science, have had trouble attracting younger workers; RA partners appreciated that the PA programs promoted the exciting apprenticeship opportunities available to young people. In other sectors, such as construction, the cyclical need for workers meant that construction RA partners valued having a go-to source for new apprentices when new contracts came in.

Common target populations grantees said they intentionally or incidentally recruited into their PA programs include low-income adults, justice-involved individuals, young people, and, as discussed in Exhibit 3, women. Each PA program had staff specifically charged with recruiting participants, but most relied heavily on community partners to help them publicize their programs. Reported partners included WDBs, local high schools, probation and parole offices, community-based organizations, and the RA partners themselves.

Many PA programs, especially those serving adults, count on referrals from community partners who serve high-barrier job seekers. Partner referrals are a good way to recruit PA participants and are beneficial to all partners because (1) the PA program is able to leverage recruiting assistance from the community organizations actively trying to connect people to jobs and training, and (2) the partner organizations are able to refer their clients to free training and to connections to apprenticeship opportunities.

Other common ways to find participants include building off career pathways infrastructure, word of mouth, and advertising. For schools that had organized learning opportunities into sector-based career pathways, PA programs were able to leverage existing organizations, infrastructure, and outreach. For instance, several grantees had pre-existing academies, pathways, or tracks in construction, healthcare, or manufacturing, and they recruited PA participants from among students already engaged in sector-based learning. In particular, high schools with a strong focus on sector or career and technical education (CTE) opportunities were used to promoting opportunities like the PA program to students; they already had reliable sets of promotional activities such as presentations in classrooms, flyers, emails, one-on-one referrals through counselors, and career fairs where they could reach out to potential participants.

PA sites also said that word of mouth was important for reaching younger participants and local residents. Grantees reported that each cohort's successful transition into apprenticeship (and other employment) resulted in increased interest from the community. In addition to these forms of outreach, most CAI PA programs had Facebook pages or other forms of social media presence, and some reported using bus ads and print media to recruit students.

EXHIBIT 3.
Core Services of Pre-Apprenticeship Programs

Traditionally, many of the most visible PA programs across the country specifically target women for careers in RA trades such as construction, manufacturing, and transportation. While many CAI PA programs listed women as a population they hoped to recruit, very few had specific strategies for how their outreach, supportive services, technical training, or follow-up support could specifically improve outcomes for women. Several grantees even noted specific barriers to RA participation that they felt their programs had not addressed, including:

- Women not feeling like the industry—construction, manufacturing, automotive—is for them.

- Women not feeling comfortable or dropping out during training because they are intimidated by classmates or training requirements.

- Women not being able to meet the demands of the job once hired due to physical requirements, or not being able to find stable childcare that matches the job's schedule.

Previously published implementation study findings and case studies as well as a host of national resources designed to help programs attract and retain women suggest specific activities that can support increasing the number of women in RA occupations—for example, including pictures of women on promotional materials, providing women mentors, and coaching RA partners on how to create equitable and welcoming workplaces.

Of note, at least two CAI PA grantees that experimented with more targeted outreach, services, and programming had good success. One grantee in IT, for example, changed the language on their marketing materials to promote careers in "tech" instead of the specific occupation, computer programmer; their own research showed women can feel intimidated by the idea of working in software, but tech is viewed as more approachable. This program had very good success in recruiting and admitting cohorts that were almost 50 percent female. Another PA program experimented with running an all-woman cohort at the request of an RA partner that was looking to recruit women. The grantee reported that the all-woman cohort increased visibility of issues specific to women pursuing and succeeding in construction careers, such as procuring flexible, reliable childcare. PA participants had good rates of persistence, and the RA partner was particularly appreciative of the endeavor, which helped them meet important diversity goals.

At the time of this writing, data on how successful CAI PA sites were at placing women into RA programs was not available. Demographic and qualitative data gathered for this brief suggest that grantees were successful at recruiting women to participate in PA programs—especially at the high school level—but that they still struggle to place women in RA programs. Several grantees also reported problems with women dropping out of RA programs once accepted.

Sources: Pre-Apprenticeship: Pathways for Women into High-Wage Careers (https://www.doleta.gov/oa/preapp/pdf/Pre_Apprenticeship_GuideforWomen.pdf); Women-Only Pre-Apprenticeship Programs: Meeting Skills Needs and Creating Pathways to Good Jobs for Women (https://iwpr.org/wp-content/uploads/2018/10/Women-Only-Pre-Apprenticeship-Programs_low-res-1.pdf); Evaluation of Pre-Apprenticeship and Retention Services in the Construction Trades in Oregon (https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1044&context=soc_fac).

In addition to recruiting, the majority of PA grantees reported that screening was a high-value service they provided to their RA partners. For instance, one designed its PA program around screening and preparing interested candidates already on its RA partner's waitlist, which included over 1,000 names. In this case, the RA program had plenty of interested, potential apprentices but retention had consistently been very low. In response to this problem, the PA program was set up to call waitlisted individuals and invite them to an orientation and assessment; then, the PA program itself—a two-week boot camp—acted as the final screen. PA participants who successfully completed the physical and logistical requirements of the boot camp were then fast-tracked into the RA program. The RA partner found that individuals screened through the PA program had much higher rates of retention.

Sites reported that screening for good PA candidates included a balance of several criteria: screening for interest in the occupation, screening for perceived ability to be successful, and screening for the entry-level requirements of the RA. When assessing potential apprentices, PA programs said they had to be realistic about who would be academically, physically, and logistically ready to enter RA after completing PA programming. This often meant turning away students or clients the organization might typically have served in other kinds of programs as well providing referrals to those who were not yet ready so they could obtain more education or supportive services. Common elements of screening for PA programs included:

- **Orientation**: As a first step to acceptance, the majority of PA programs required participants to attend an orientation where program representatives described the opportunities to join a specific RA as well as what the PA program would provide. Grantees reported that they tried to be very specific in these orientations about the requirements of both the PA and subsequent RA program in order to screen out individuals who would not be able to follow through.

- **Multi-step application programs**: A common process for identifying participants who were diligent and truly interested was a multi-step application that might include a mandatory orientation, a paper application, interviews, and/or testing. Being able to complete an application process with multiple steps measured a participant's ability to listen to directions and follow through.

- **Interviews**: Interviews were often the final stage of a multi-step application. Many PA programs said this provided an opportunity to gauge each individual's interest in PA as well as baseline professionalism or attitude.

- **Assessment and testing**: The majority of PA programs conducted testing or assessment during the screening process. For some, the emphasis was on testing—ensuring that the applicant had a sufficient basic education foundation to successfully complete the PA program. Other programs used assessment as a baseline for understanding the level of remediation and support the individual would need over the course of the PA program.

Most programs provided a mix of recruitment and screening. More specifically, they reached out to populations like out-of-school youth, dislocated workers, women, and veterans, and then engaged in a multi-step screening process to assess mental, educational, physical, and logistical readiness for the RA partners.

Providing Remedial Education and Support Services

As shown in Exhibit 4, CAI PA programs' approaches to supporting participants to pursue and be successful in RAs had two major components:

- Providing basic academic remediation so that pre-apprentices met the minimum education requirements of the RA program and could participate in the PA program's technical training component; and

- Providing supportive services, assistance, or general stabilizing measures that participants would need to be successful in their apprenticeships or other employment.

EXHIBIT 4. Frequently Offered Types of Remedial Education and Support	
Education Supports	**Supportive Services**
English language	Childcare
Literacy	Transportation
Numeracy	Books, supplies, uniforms, tools
GED preparation	Work readiness

As stated above, educational prerequisites are determined by two factors: the entry-level requirements for the RA program (many of which have entry exams in place to test potential apprentices), and the comprehension and skills pre-apprentices need to complete the technical training component of the PA program.

To help PA program participants meet the minimum education requirements required by RA partners, most PA programs focused on GED acquisition, English literacy, and basic numeracy skills. While some programs integrated math or literacy into some of the technical training elements (e.g., construction math, reading blueprints) many referred participants to partners like local adult schools or other departments within educational institutions that specialized in GED prep and basic math and reading.

By assisting participants with academic remediation, PA programs were able to prepare them to have the credentials and/or assessment scores to get into RA programs. Education support also helped students to be successful after they were admitted to RA programs, because they were academically prepared to keep up with the training and instruction offered in the apprenticeship.

To prepare participants logistically and mentally for the demands of RA, PA programs worked on sourcing (either in-house or through partners) a suite of supportive services aimed at creating the stability and readiness required to take on an RA position. Depending on the target population that the PA program was working with, this aspect varied greatly. One program that targeted high-barrier adults and those coming out of incarceration engaged in a six-week job readiness program that included Thinking for a Change, a nationally recognized cognitive behavioral therapy curriculum. The goal was to equip participants with good teamwork, problem-solving, and anger management skills.

Other programs focused on helping students come up with reliable transportation plans or childcare options. Many programs paid for the books, supplies, and uniforms the apprentices needed to be successful on the job. Grantees reported that helping participants address any barriers to persistence before starting their RAs, thus improving the chance of retention, was of particularly high value to tRA partners.

Delivering Hands-On Technical Training

The scope of CAI PA program technical training varied from a two-week boot camp to a multi-year residential program. The majority of CAI PA programs fell somewhere in the middle, usually with 8 to 12-week, part-time programs designed to provide entry-level technical training. The technical training—often blended with remedial education, as detailed above—included both hands-on experience in performing common work tasks and classroom learning. As part of this technical component, most PA programs provided industry-recognized credentials to participants and based the technical portion of their programs on the needs of their RA or employer partners.

- **Hands-on training**: The RA model is designed to provide a structured training pathway specifically for occupations where the bulk of the knowledge, skills, and abilities needed to be successful are learned through applied practice. Thus, the hands-on component of PA technical training is very important to helping pre-apprentices prepare for apprenticeship. It introduces them to the kinds of work tasks they will perform as apprentices as well as to the tools and vocabulary they will use on the job. In many cases, it also introduces the culture, logistics, and conditions that they will experience as apprentices. This exposure serves several purposes. First, hands-on experience provides another round of "screening," culling students who find they do not like or cannot perform in the day-to-day working conditions or on the tasks required. This was particularly pertinent for CAI PA programs in the construction trades, which introduced participants to the reality of entry-level construction jobs: working outside, working long days, and the very physical tasks of lifting, climbing, and shoveling. Experiential learning also prepared PA participants to be competitive in their RA applications by giving them opportunities to practice skills that were required on entrance exams and by providing them certification or credentials that made them more attractive to RA programs and other employers. For instance, automotive PA programs provided students with practice working on real engines. Program staff said this experience made their participants more competitive when they went to interview for local jobs and RA opportunities that had testing components.

- **Classroom instruction**: While many building and construction RA programs require only a high school diploma as an entrance requirement, some do require advanced levels of postsecondary training as a prerequisite to entry. As such, another important service that PA programs offered was classroom-based technical education. Distinct from remedial education (see above), several PA programs offered postsecondary-level coursework required for entry-level positions in their industries. For instance, most firefighter apprenticeship programs require multiple postsecondary fire science courses as well as Emergency Medical Technician (EMT) certification just to gain entrance. Likewise, an advanced manufacturing PA program offered college-level coursework in physics and industrial mechanics principles that was intended to help students pass a very challenging entrance exam. Other California RA programs in sectors such as IT and healthcare also have high educational or certification/licensure requirements for entry. To help participants achieve entry into these types of programs, postsecondary-level coursework and credentialing must be a component of PA program technical training.

Determining the technical skills curriculum of a PA program is an exercise in providing just enough training and exposure to allow participants to be successful in their next endeavors. As described, the goal of PA is to create a pathway to RA. The very model of RA is to train individuals on the job, so it follows that PA programs should focus on preparing individuals for the training they will receive as apprentices (versus providing the training as part of the PA program). At the same time, however, not all PA participants will enter RA, and those students should be able to walk away from training with marketable skills and certifications.

This balance looked different for each CAI PA program. In one instance, a two-week boot camp was enough to prepare PA participants for RA and get them their OSHA 10 certification, an industry-recognized credential with value in the regional construction labor market. At another site, the PA program was over 200 hours, but it included the coursework required to sit for EMT certification. This is a prerequisite for the RA program, but it is also a valuable certification that enables those who pass to work in a number of public safety and healthcare occupations. In sum, CAI PA programs worked closely with RA programs (and other industry employers) to ensure that PA programming prepared participants specifically for RA, but they were also mindful to design programs with technical training that benefited all completers.

Connecting Pre-Apprentices to Registered Apprenticeships . . . and Other Opportunities

In 2009, The Aspen Institute's Workforce Strategies Initiative conducted a survey of self-reported PA practitioners. Of the over 200 PA programs that responded, 95 percent said they had linkages to RA programs. At the same time, however, more than a third reported that fewer than 25 percent of their participants went on to RA, with related employment being the primary outcome.[7]

Similarly, CAI PA programs did not experience, nor did any expect to experience, a matriculation rate of 100 percent into RA. One reason is that, like all jobs, exact demand for entry-level workers shifts over time and cannot be predicted with complete accuracy. This makes it difficult for PA programs and their RA partners to plan for exact apprenticeship needs. Another reason is that PA program participants often discover during training that they wish to pursue other pathways. This is another important function of PA—to ensure that those matriculating to RA are serious about persisting. RA programs stated repeatedly that one value of PA programs is that they give potential apprentices realistic experiences of RA and weed out potential apprentices who would not be happy or successful on this pathway. As a result of these and other factors, CAI PA programs reported a number of successful outcomes for their completers, including (but not limited to) continuing on to RA (see Exhibit 5). CAI PA programs were successful in linking their participants to RA programs as well as to other kinds of related employment, work-based learning, and continuing education.

- **Pathways to RA**: CAI PA grantees included both traditional PA programs in the construction trades and manufacturing as well as programs seeking to develop pathways into apprenticeship in the hospitality, automotive, fire science, IT, and healthcare industries. These programs were designed to prepare pre-apprentices for RA admittance; in addition, many were able to secure PA completers some advantage in the RA application process, including extra points on the application, guaranteed interviews, and credit towards RA hours for the time spent in PA. Grantees also described how the real application advantages were not formalized in the agreements but rather were social. Many RA partners served as PA program participants' technical trainers, or they had other ways of maintaining ongoing contact with them while they were in training. This exposure gave RAs a chance to "check out" the next class, often putting PA participants in an unofficially preferential position. The other unofficial benefit conferred to PA participants was the reputation of the PA programs. Grantees reported that after several successful cohorts of PAs had matriculated into RA programs, the RA partners expressed general confidence in the participants and were more apt to think favorably of particular program graduates versus applicants who came through other channels.

- **Entry-level employment**: Many PA programs reported that participants who did not go on to RA did find related employment. For example, one construction program reported that while the majority of completers went on to join a local RA, some were able to leverage their training to secure related employment in the construction industry.

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7   See Maureen Conway and Allison Gerber (2009), Construction Pre-Apprenticeship Programs: Results from a National Survey, Washington, DC: The Aspen Institute (https://files.eric.ed.gov/fulltext/ED507767.pdf).

EXHIBIT 5.
Common Outcomes for PA Program Participants
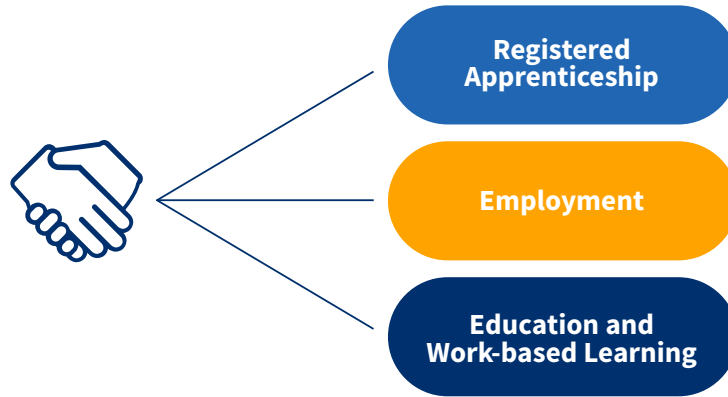
- **Education and work-based learning opportunities**: PA programs also looked to build connections to other kinds of work-based learning opportunities. For example, one high-school-based PA program was able to connect students in its healthcare pathway to internship opportunities at local hospitals. Likewise, a robust automotive PA program successfully connected to many local auto dealers who offered internships and opportunities for learning on the job. Other programs focused on further education as an alternative to RA. For example, one college-based PA grant offered a machining pathway that was in many ways commensurate with the RA program they worked with. The program presented the college's coursework and credentialing as an alternative for students who either could not pass the RA test or who were interested in manufacturing careers outside of the RA partner. Another college-based PA program described a construction management track at the college as an alternative for participants who were not a fit for RA.

III. Program Development

As detailed above, PA programs were built around a core set of elements, but the variation across elements and emphasis on certain aspects was driven by the needs of RA partners and the individuals participating in the PA. The development of individual PA programs involved:

- Establishing partnerships with RA programs to provide prepared and qualified apprentice talent;

- Developing a technical curriculum, including deciding what kinds of industry-recognized credentials or certifications to offer;

- Setting up a supportive services plan that addressed what services the PA program could offer and what could be referred out to partners; and

- Developing and articulating to pathways into RA (including developing linkage agreements) and other opportunities.

Working on these design elements and moving forward with programming was an ongoing process for CAI grantees. Round 1 grantees, many of whom recently completed their period of performance, all shared that over the course of their grant, each of these elements was really a work in progress. As programs matured, partners were brought on, and both PA and RA partners were able to analyze their success in matriculating PA completers to RA programs as well as in other shared goals, such as recruiting certain target populations. The experiences of and choices made by the CAI PA grantees as they worked through these key tasks are discussed below.

Establishing Partnerships with Registered Apprenticeship Programs

According to the majority of grantees, the most critical step in program development was finding an RA partner. Programs that were successful generally started out with an RA partner or partners and built the PA program around their partners' needs. In some cases, the grantee—which, in the case of CAI, was necessarily an educational organization—was already the RA's local education agency (LEA), making collaboration between PA and RA programs simpler. As the LEA, the PA program already had insight into the kinds of requirements, curricula, and expectations of the RA. In several cases, the LEA had already worked with the RA to ameliorate issues that the RA faced with apprentice recruitment, selection, and persistence. Having that familiarity, trust, and working relationship already in place set these sites up to be successful.

Other grantees did not start out as LEAs; they started from a place of having a strong, familiar CTE curriculum with which to prepare students for entry-level work. These programs used their CAI PA grants as an opportunity to find RA partners with whom they could collaborate to become PA programs. For these grantees, outreach prior to the grant included leveraging individual employer relationships, regional sector partnerships, employer advisory groups, industry associations, and building trades councils. These groups and employers were often already connected to the college or school hosting the PA program but perhaps not in the context of apprenticeship.

Thus, building the PA program for the RA or employer partner allowed the school to respond to the needs of their industry partners in a new way. One grantee reported that while building a PA program with the RA partner—whom they met through regional sector partnership work—the RA decided to make the grantee its LEA.

For programs that started out with specific RA partners in mind, the emphasis on program design was ultimately about solving each RA's pipeline problem. As noted earlier, RA partners faced a range of challenges that included not being able to recruit enough apprentices or meet EEO or local hire requirements and finding that RA applicants were not able to pass the entry test or persist over a multi-year training program. PA program specifics of recruiting and screening, remediating and supporting, training, and connecting were all designed to solve these challenges.

When programs were built without specific RA partners in mind, building those connections on the back end proved to be very difficult. In some instances, the barrier to partnership was that recruitment and training services provided by the PA program did not align with the needs of the RA. In some areas, especially in the building and construction trades, RA waitlists were long and demand for apprenticeship slots was high. In these cases, the RA partners did not have general labor supply issues (that is, they had enough total applicants); rather, they had very specific labor supply issues (such as not enough applicants with special skills, applicants from particular zip codes, etc.). Unless these challenges were analyzed closely and in collaboration with the RA, a PA program could miss the opportunity to make a high value connection.

While unsuccessful partnerships with existing RAs were rare across grant sites, one grantee reported that a local union-based RA in the region viewed the PA as competition rather than as a source of new applicants. Since the grantee had developed the PA program independently with the hopes of partnering with the RA downstream, they did not understand the specific challenges the RA was facing. In this case, the union RA was concerned about controlling the market for skilled labor in the area; they needed quality candidates for apprentice slots but were concerned that the PA program would overrecruit, creating an oversupply of talent that would go to non-union organizations. A more common problem for PA programs needing to create linkages was a lack of local, applicable RA programs. They often found that there were no programs for them to connect to, especially outside of construction. For instance, two high-school-based sites reported wanting to use PA to build specific bridges from pre-existing career pathways infrastructure into RA opportunities, but those pathways did not line up to RA programs in their region.

Building the Technical Curriculum

One of the most valuable aspects of the RA model is that it is designed to train entry-level workers—so the requirements for baseline skills and education (as well as starting wages) are intentionally lower than in similar job classifications that require postsecondary training. Generally speaking, many RA programs pride themselves on their ability to provide technical training; thus, they are most interested in PAs providing applicants who are ready to learn and know just enough to get started. At the same time, however, PA programs know that not all participants will pursue RA. As such, they need to ensure that these students complete their programs with marketable skills and credentials.

For PA programs in the building and construction sector, there was no shortage of pre-existing curricula to leverage. Most of these programs relied on curricula they had already developed for previous projects or they looked to other pre-existing models in the public domain to replicate. Very few programs said they developed a specialized curriculum just for the CAI grant. Construction programs also had the benefit of being able to utilize the Multi-Craft Core Curriculum (MC3). MC3 is a comprehensive PA curriculum developed and approved by the Building Trades National Apprenticeship and Training Committee that has been widely adopted as a foundational curriculum for many PA programs.[8] One grantee clarified that MC3 was a starting point for designing her program because it provided a good overview of the kinds of "basic technical-mechanical knowledge" it takes to build things; in and of itself, MC3 is not a complete program, but individual PA programs can and do customize it to fit their specific partners, participants, and regional contexts.

For programs outside of the construction sector, curricula were primarily based on pre-existing, successful CTE programs. In most cases, a curriculum was vetted by the school's employer advisory group and could therefore be adapted to the PA program. In several cases, a community college had a pre-existing training relationship with a local employer—for both customized training and more general feeder programs—and after inquiring found out the employer also had a registered apprenticeship program. Offering PA was another way for these colleges to provide high-value pipeline assistance to pre-existing partners.

In determining what kinds of technical education and skills to offer participants, grantees started by looking at the entry-level requirements for the RA programs. For instance, a firefighter PA program offered a full EMT course because many fire departments require new entrants to begin their apprenticeships with an EMT license. Similarly, an IT PA program provided participants with coursework that would help them get certifications that were required for entry to RA. Other programs looked at what certifications would make pre-apprentices more competitive in their RA applications.

One construction PA program reported that by giving participants a specific industry-recognized credential in hazardous waste cleanup, they jumped to the front of the queue—not just for RA slots, but also to go to work right away doing environmental cleanup. In this way, certification requirements provided another set of straightforward guidance to PA programs as to what to include in the technical curriculum.

Designing Academic and Supportive Services

Supportive services, including academic support, were designed to address specific barriers that can keep lower-income, less educated, and generally harder-to-serve individuals from being able to access RA opportunities. In general, this means that PA programs have been free of cost to the participant, and most were designed to accommodate working adults or young adults who need to work while in training. The majority of CAI PA programs also offered access to education and other kinds of support designed to create enough stability to allow participants to complete training as well as to get and keep a job. Other factors that contributed to the suite of services the PA programs offered included the resources available in the community and feedback from RA partners about what stability measures would allow for persistence in RA programs (e.g., passing regular drug testing, being in possession of a valid driver's license, having access to reliable childcare).

Grantees identified the needed services and educational supports required in two primary ways. PA programs that partnered with a community-based organization or a school with a history of serving specific types of high-barrier individuals already knew what services and supports would help participants to complete training, pursue opportunities, and retain work. Grantees also talked to RA partners directly, as they often had good information about who was (and was not) able to pass entry-level requirements and why apprentices were not successful once they had been hired. With this information, grantees were able to work backwards to design programming that would help students attain RA entry and to provide supports or skills that would help them persist once they landed a job.

In order to meet the more general demand of serving working adults or young adults who might needed to work during training, programs took different approaches to program delivery:

- **Short and full time**: One program had a very compact, full-time training schedule that packed 80 hours of training and credentialing into two weeks. The idea was to balance the need to expose PA participants to the realities of apprenticeship work (long days, working outside, getting up early) with the financial burden of asking participants to devote themselves full-time to training.

- **Part-time**: Other programs were part-time, often at night, only on certain afternoons, or on the weekends. Part-time schedules allowed participants to work and still attend their PA programs, making these programs attractive to people who were already working but looking for an opportunity to pursue RA.

- **Long and full-time**: Some PA programs were longer and full-time. For instance, one program offered a 12-week, full-time program (35 hours per week). This intensive program was highly successful at transitioning high-barrier adults—specifically ex-offenders and low-income residents—into RA programs, but program staff said that it was challenging logistically for those facing financial hardship or housing instability. Since the program ran from 7 a.m. to 3 p.m., Monday to Friday, some participants were able to work part-time on weekends or in the evenings; others could not manage an alternative work schedule and lived with family, with friends, or in their cars while in training. While many grantees commented that offering a small stipend would make a significant difference in helping people succeed in training and transition to work, most were not able to offer such stipends due to the cost.

- **Incorporated as part of school day**: Programs serving high school students also varied in design. Many were folded into the school day so students could pursue high school diplomas while participating in the PA programs. These programs were offered at both traditional high schools that kept to regular, period-based schedules as well as nontraditional high schools that often offered flexible or customizable schedules. One CAI grantee offered PA programming during an optional "zero" period before school; another program was offered after school.

In order to deliver supportive services across this spectrum of needs, grantees generally leveraged existing resources, either within the schools or in the community. Many high schools and colleges already had a range of supportive services available on campus—such as career counselors who could help with job readiness, social workers who could connect participants to social services like food or income assistance, and, in some cases, offices or counselors who worked with specific groups such as veterans.

The other most common way for grantees to offer supportive services was through referral. Grantees, especially those who worked with adults, partnered closely with local CBOs to provide services such as childcare subsidies, assistance applying for food stamps and housing support, and substance abuse treatment. Several grantees also said the local WDB was an important source of funding for supportive services such as paying for books or uniforms. Sites often reported that grant funds allowed them to provide services and resources to participants beyond what they might have using traditional funding streams. These "extras" included paying for equipment, providing bus passes, buying participants' books, reimbursing testing fees, and paying for union initiation dues.

To prepare students for admittance to RA, PA programs employed several strategies to help them succeed academically. Many grantees worked with local adult schools that were already offering GED programs, English language classes, and other basic education support. Others found success with contextual learning: For example, they reported that integrating basic education into technical training, such as providing construction math, was a good way to help participants achieve academic and technical readiness. Another successful strategy for helping participants improve basic education skills on their own time was to refer them to online reading and math courses specifically designed for adult learners to improve literacy and numeracy.

Developing Pathways

As described throughout this report, PA programs were designed to connect people to RA, with a particular focus on giving them the support, education, and skills they need to pass RA entrance exams and be successful on the job. However, as with all employers, an important goal of RA programs is to find the best candidates in every applicant pool. Working with RA partners to determine the flow of PA participants into RA was an ongoing process for the CAI PA grantees. Where possible, grantees looked to secure advantages for their participants in the RA selection process. Different RAs had different structures (single employer, multiple employers, union, non-union) as well as differing application and acceptance processes. As such, the kinds of advantages offered to PA participants also varied. These included:

- **Exposure**: The majority of CAI PA programs with strong ties to an RA partner said the biggest advantage to participants was exposure. RA partners engaged with PA participants during the PA program by, for example, serving as technical trainers, giving jobsite tours and presentations, conducting mock interviews, and hosting work-based learning experiences. All of these opportunities to interact gave PA participants advantages when the time came to apply for RA positions.

- **Extra credit**: Some grantees worked out ways for PA participants to get additional points on their RA applications. In RA programs that used top scores as a basis for admission, these extra points gave PA participants a competitive boost. Another way PA programs were able to facilitate extra credit was by providing industry-recognized credentials or certifications that were of value to the RA. These qualifications counted as over and above entry-level requirements, thus warranting additional points or increased consideration.

- **Preference**: Some PA programs worked out agreements with RAs where PA completers moved to the front of the line to take the RA entrance test. Other programs were able to guarantee interviews with the employers. For RA programs with long waitlists or competitive pools of applicants, these were very important advantages.

- **Direct entry**: In some cases, PA participants who successfully completed their programs were automatically accepted into RA programs. This was the least common linkage arrangement, as it required a high degree of trust and communication with the RA partner to ensure that the right volume of apprentices were coming through and that supply matched demand.

- **Credit**: Several PA programs arranged ahead of time for their participants, once accepted into RA, to receive credit for time or credentials attained through the PA program. These agreements conferred important benefits to participants.

At the policy level, AB 235, EDD Draft Directive 178, Training and Employment Notice No. 13-12, and RFAs for CAI PA programs[9] call for PA programs to formalize these kinds of arrangements with their RA partners. However, grantees reported limited success in translating these advantages to formal signed agreements; most operated on more informal arrangements with their RA partners.

Those who were successful in developing formal agreements (and strong informal arrangements) said the key to articulating advantages and securing linkage agreements was two-fold. First, there needed to be a demand for apprentices. Like all workforce training programs, participants' ability to successfully transition to full employment was dependent on there being jobs—or, in this case, RA slots—to fill. RA and PA programs faced this specific challenge in navigating the variation in demand for apprentices and, in some cases, specific apprentice skillsets or credentials. The other requirement for securing advantages for PA participants was a strong relationship with the RA partner. PA programs described the commitment and willingness of RA partners to take on their pre-apprentices as the cumulative result of consistently providing willing, ready, and motivated candidates.

Another important linkage PA programs created was to the broader regional career pathways infrastructure. Many grantees, including those in manufacturing, healthcare, and construction, were tied to larger regional or school-based career pathways or academies, either within their own schools or as part of a broader system. This broader system was often linked to (or it supported) a variety of opportunities, such as internships, entry-level employment, and postsecondary training. At the scale of individual college departments, there were also college-based grantees whose PA curricula were based on credential or degree paths for the same occupation or industry, and these grantees were able to refer participants to degree programs (as opposed to RA).

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9   Regarding AB 235, see https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB235; regarding Training and Employment Notice No. 13-12, see https://wdr.doleta.gov/directives/attach/TEN/TEN_13-12_Acc.pdf; regarding EDD Draft Directive 178, see https://www.edd.ca.gov/jobs_and_training/pubs/wsdd-178.pdf.
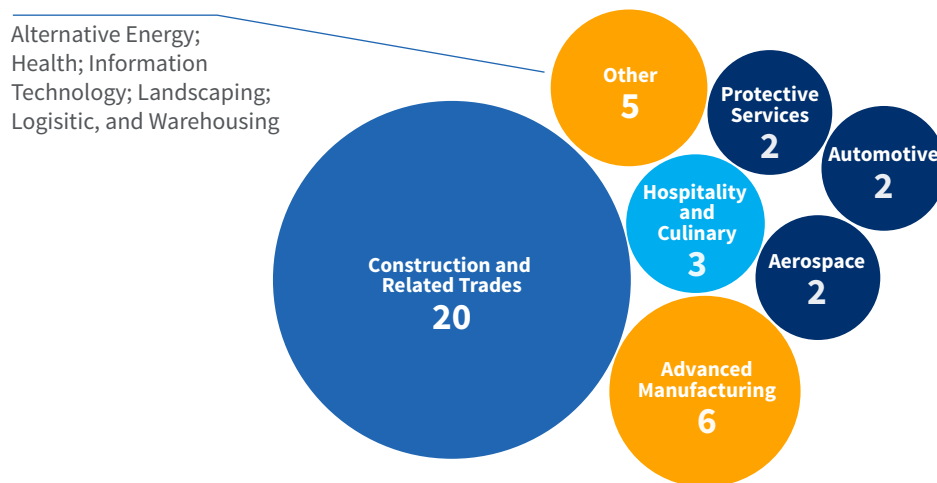
IV. Outcomes

CAI grantees met the initiative's goal of serving a diverse group of participants, and the number of pre-apprentices has increased since the initiative began in 2016. This section describes these and other early outcomes of the 35 CAI PA grantees to date. Here we summarize the industries represented among the grantees, the number of participants served, the number of completers, and participant demographics and outcomes.

Industry Representation

As shown in Exhibit 6 below, CAI PA programs were overwhelmingly focused on construction, with over half of grantees reporting this industry as their focus. A smaller cluster of six grantees focused on advanced manufacturing. The remaining grantees were in industries represented by just one, two, or three grantees. These included hospitality and culinary (n=3), automotive (n=2), aerospace (n=2), and protective services (n=2), as well as alternative energy, health, information technology, landscaping, and logistics and warehousing. This diversity supports another goal of CAI, which is to expand the types of industries that use an apprenticeship model.

EXHIBIT 6.
Pre-Apprenticeship Industries Reported by Grantees

Alternative Energy; Health; Information Technology; Landscaping; Logisitic, and Warehousing

Other
5

Protective Services
2

Automotive
2

Hospitality and Culinary
3

Construction and Related Trades
20

Aerospace
2

Advanced Manufacturing
6

Sources: Grant applications and grantee interview responses.

Enrollments and Completions

Between 2016 (the beginning of the initiative) and January 2018,[10] the number of pre-apprenticeship participants increased from 741 to 2,619, thus expanding the pool of potential applicants to RA programs and supporting a primary goal of the CAI PA initiative. In the same period, the number of PA completers increased from 192 to 578, in keeping with the initiative goal of expanding the pool of potential applicants to apprenticeship programs (Exhibit 7).

EXHIBIT 7.
Pre-Apprenticeship Particpants and Completers, 2016-2018
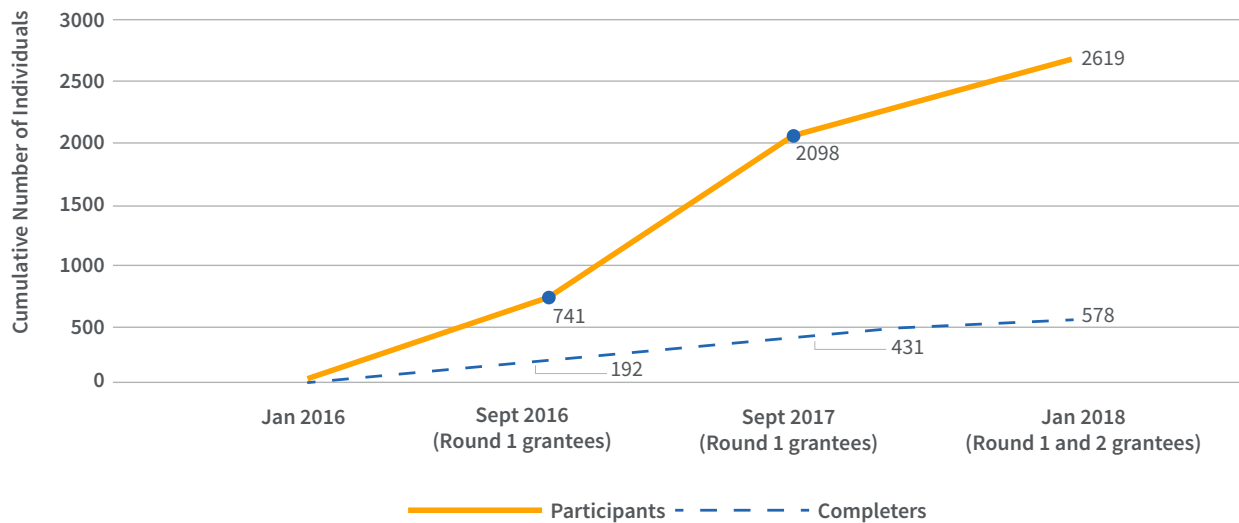
Source: Grantee reports to SPR.

Note: All of the 2016 participants seen in Exhibit 7 were from seven of eight Round 1 grantees as one grantee received the grant late and did not report enrollment to SPR until later in the grant period. The January 2018 totals include participants from all Round 1 grantees and participants from 8 of 12 Round 2 grantees. (Round 2 grantees that did not report participants were still in the program planning phase.)

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10   The most recent data available on participant enrollments are through January 2018.

Post-Completion Pathways

Grantees reported the number of pre-apprentices placed into RA programs as part of their quarterly reporting to the Chancellor's Office. However, because of inconsistencies in how placements were reported, the numbers are not included here.[11] SPR will collect these data from current grantees beginning in 2019. In addition, PA programs will eventually be required to register pre-apprentices with the Division of Apprenticeship Standards (DAS), as specified in AB 235, which was passed by the California state legislature in 2018.

While quantitative estimates are not yet available, anecdotal reports from grantees during our interviews indicate that participants successfully connected to RA programs as well other pathways, such as employment, further education, and internships.

Participant Demographics

As noted earlier, and as shown below in Exhibit 8, CAI grantees showed particular success in recruiting female and Black participants into their PA programs, with both groups constituting a higher portion of participants than in the state's overall apprentice population. For example, women represent just 6 percent of registered apprentices in California versus 27 percent of CAI PA participants. This demonstrates the success of PA programs' active recruitment strategies for some underrepresented populations, including women and Black people.

EXHIBIT 8. Demographics of Pre-Apprentices in Round 1 and 2 Programs			
Characteristic	**CAI Pre-Apprentices**	**All CAI Apprentices**	**CA Population**
Female	27%	6%	50%
Asian	4%	5%	15%
Black	11%	7%	7%
Hispanic	47%	49%	39%

Sources: Grantee reports to SPR in 2017 and 2018 (CAI pre-apprentices); DAS, December 2016 (All CA apprentices); 2016 U.S. Census (CA population).

Note: CAI results are for 2,619 pre-apprentices who enrolled in Round 1 programs between January 2016 and September 2017 and individuals who enrolled in eight of 12 Round 2 programs between March 2017 and January 2018.

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11 The primary inconsistency is that some grantees reported apprenticeship placements that occurred in a given quarter and others reported a cumulative number (i.e., all placements in the grant period). Given the uncertainty in what was reported (point in time vs. aggregate), the numbers are not reliable. In Round 2 of the initiative, SPR conducted a webinar to provide clearer guidance on reporting to help address the issue.

The portion of Asian pre-apprentices was similar to the overall apprentice population. Likewise, those who identified as Hispanic were well represented among apprentices and pre-apprentices. Notably, apprentices in California are concentrated in the construction industry, and one third of workers in the construction occupations identify as Hispanic.[12] The diversity of PA participants combined with increasing enrollments over time indicates that PA grantees achieved the goal of increasing the number of potential applicants, especially in targeted underrepresented populations, for apprenticeship programs.

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12 2017 Current Population Survey data from the Bureau of Labor Statistics indicate that 36 percent of workers in construction and extraction occupations are Hispanic (see https://www.bls.gov/cps/cpsaat11.htm).

IV. Sustainability

In the short term, CAI grantees are actively looking for ways to sustain and grow their programs. Many reported that their PA programs had not yet been adopted by the region's limited but sustained funding streams for education and the workforce (such as college apportionment or WIOA Title IB funds for adults, dislocated workers, and youth). As such, they were seeking out additional grants from the Chancellor's Office, the state workforce board, and other public and philanthropic sources of grants in order to keep the programs going. Other programs had emerged from their proof-of-concept phase and reported linking to more institutional sources of funding, including the following:

- **Apportionment**: A few grantees were seeking to move their PA programs to the for-credit side of their colleges, which would make them eligible for apportionment funds.

- **CTE/Perkins Grants**: Other grantees were looking for ways for pre-existing career academies and career pathways programs to absorb their PA programs.

- **WIOA Individual Training Account dollars**: Some programs were working with local WDBs to access training and supportive service funds to support PA.

- **Community Development Block Grants/adult schools**: Several programs said they were exploring deeper partnerships with regional adult schools that were mandated by WIOA (and had some funding) to provide on-ramps to regional career pathways opportunities.

Ultimately, these funding sources would provide an opportunity to continue to connect partners across the workforce, education, and employer communities around shared goals for strong regional economies. These sources of funding are also already stretched across a number of investments; as such, grantees were skeptical about their ability to fully fund or grow PA offerings without the infusion of additional funds.

Thinking towards a more sustainable and integrated model of PA as part of a broader network of training options, a major source of support and underpinning for the CAI PA programs has been California's investment in regional career pathways. Many grantees cited previous partnerships, curricula, or relationships with employers formed as part of career pathways work at both the school and regional level. This informed the decision to pursue a CAI grant as well as many of their resulting program design decisions. Funding includes state-specific initiatives such as California Career Pathways Trust grants, Slingshot, Doing What Matters, and Workforce Accelerator grants, as well as several federal grants such as the U.S. Department of Labor's Workforce Innovation Fund and Trade Adjustment Assistance Community College and Career Training programs. Together, these funding initiatives to support regional economies represent hundreds of millions of dollars of investment in building connections between training and work. The RA model—which is both work and training— is a compelling next step, and it is an opportunity for PA programs to become more systemically integrated with apprenticeship programs.

V. Conclusion

The California Apprenticeship Initiative has made substantial progress toward its goal of making the opportunity of apprenticeship accessible to all Californians. Over 2,500 participants have participated in CAI PA programs so far, with many going on to become registered apprentices. The key lessons learned, which can inform future PA development, are summarized in this section.

- Pre-apprenticeships must be customized to meet specific talent-supply issues faced by RA partners. Across CAI PA grantees, successful PA models varied in their partnership structure and program design, but they uniformly provided high value to RA partners because they helped them solve specific problems in the recruitment and retention of qualified applicants. Grantees reported that developing a nuanced understanding of what RA partners needed and then crafting a PA program to meet those needs went beyond a good technical curriculum; it required careful customization of recruiting, screening, supporting, and training components.

- More information is needed to determine how successful CAI PA grants have been in connecting target populations to RA. PA programs have been shown to be an effective way to create pathways for underrepresented populations into RA and CAI PA grantees were successful in recruiting women, youth, low-income adults, justice-involved individuals, and other underrepresented groups into their PA programs. However, due to inconsistent reporting across sites, we cannot yet report on the degree to which grantees were successful overall.

- Not all pre-apprentices will become apprentices, and this is an important consideration for partners and funders. CAI PA grantees were successful in linking with regional RA programs, and they reported understanding this linkage as a key component of their programming. However, high rates of matriculation were unusual, and many participants went on to other positive outcomes, such as related employment or further postsecondary training. The majority of CAI PA grantees expressed concern that an emphasis on RA outcomes and on creating strongly worded linkage agreements put pressure on PA–RA relationships to create contractual demands for labor. The emphasis on RA matriculation also overshadowed important decisions that PA programs and their partners made in designing programs that benefited all participants; moreover, it did not celebrate the many other positive outcomes PA completers achieved. Across the board, PA grantees were proud of their programming and the impact they had on participants, local employer and RA partners, and their regional economies.

- Partnerships between PA and RA partners require trust and take time to build. Understanding the specific value-add of PA programming to RA partners is important to creating quality PA programs, but grantees repeatedly unscored the value of long-term partnerships. Many sites leveraged previous partnering experiences and the resulting trust and working relationships that were developed to fast-track their program development. Anecdotally, programs with strong partnerships in place before the grant period started were able to begin programming before those that started from scratch or without key partners in place.

Appendix A: Methodology

The evaluation of the 24 grantees receiving funds in 2016 (Round 1) was designed to learn how program implementation had progressed toward expected grant outcomes. Funding was awarded to apprenticeship and pre-apprenticeship programs as follows:

- A total of 16 apprenticeship grants were awarded in Round 1. For these programs, the evaluation team measured progress toward expected outcomes, including creating apprenticeship programs in industries where the approach had not been common, registering programs with DAS, enrolling participants, and creating partnerships to promote participation of underrepresented populations. Fourteen of the sixteen grants were New & Innovative grants, which were intended to support the creation of sustainable apprenticeship programs approved by DAS. The remaining two were Accelerator grants. These were also intended to help to create sustainable apprenticeship programs approved by DAS, but these grantees were further along in the process and each already had an employer partner interested in apprenticeship and/or had begun the DAS registration process.

- A total of eight pre-apprenticeship grants were awarded in Round 1. For these programs, the evaluation team looked at program implementation and enrollment of participants. The goal was to understand the extent to which grantees were creating programs, connecting to RA programs, and serving individuals from targeted underrepresented populations.

Data Sources and Collection

The evaluation team collected data from three groups—program staff, employer partners, and participants—using interviews, surveys, and site visits. The evaluation team also obtained administrative data about aggregate numbers of registered apprentices, completions, and participant demographics.

INTERVIEWS

The evaluation team invited the program managers of all 24 apprenticeship and pre-apprenticeship grantees to participate in phone interviews at the beginning of the grant period (approximately June 2016) and at the end of the grant period (January 2018). In each round of interviews, 22 of 24 grantees participated. The program manager of each grantee was interviewed at least once; twenty were interviewed at both the beginning and end of the grant period.

Evaluation staff interviewed eight representatives from four employer partners at the three apprenticeship sites selected for site visits. (Site visit selection criteria are outlined in Appendix B.) At two of these sites, representatives from all participating employers were interviewed. At the third site, one of five employer partners was interviewed. At the PA site, evaluation staff interviewed apprenticeship directors from two local RA programs that received PA program graduates. In addition to RA partners, evaluation staff also interviewed frontline staff and the director from the PA program's community partner, as well as a current apprentice who had participated in the PA program.

Evaluation staff categorized and analyzed notes from the semi-structured interviews and employed an iterative qualitative analysis procedure to provide a comprehensive description of the implementation process and to identify lessons learned. The iterative process involved identifying themes and expanding or adding to them as more interviews were analyzed. The research team sought to compare and contrast responses in order to identify themes and inconsistencies, triangulate results, and identify lessons learned across grantees.

GRANTEE SURVEYS

The evaluation team conducted two surveys of grantees:

- One survey was conducted early in the grant period to learn about implementation in areas like employer engagement and curriculum development. Twenty-two of twenty-three grantees (96 percent) responded to the survey. (At the time of the survey, one grant was in the process of being awarded.)

- A second survey of only the New & Innovative grantees was conducted in fall 2017. Overall, 24 grantees receiving New & Innovative grants in 2016 or 2017 were invited to complete the survey, and 20 (83 percent) did so.[13] The goal of this survey was to learn about apprenticeship grantee classroom training.

PARTICIPANT SURVEYS

The evaluation team conducted a survey of apprentice and pre-apprentice program participants. The survey was distributed online and in person.

- The apprentice survey was distributed to apprentices in 12 of 16 programs. Three programs were excluded because they had not enrolled participants or their grants had ended by the time the survey was conducted; one other did not respond to our request to distribute the survey. The response rate was 37 percent (152 of 396).

- The pre-apprentice survey was distributed to participants at six of eight PA programs. One program was excluded because participants included individuals with disabilities that could restrict their ability to knowingly voluntarily respond to the survey; another did not respond to our request to distribute the survey. The response rate was 8 percent (33 of 425). Because of the low response rate to this survey, results were not included in the PA brief.

Surveys were distributed to all individuals who were current or former program participants at the time, except at two grantees where an in-person survey was distributed at an event where a subset of participants was present.

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13 There were a total 27 New & Innovative grants in 2016 and 2017. The survey was distributed to 24 organizations because two organizations received both 2016 and 2017 grants, and one grantee withdrew and was therefore not emailed.

PARTICIPANT FOCUS GROUPS

We conducted two in-person focus groups—one each at two of the three apprentice program site visits described in Appendix B. These focus groups included all apprentices who attended the classroom training component on the day of the site visit.

DOCUMENT REVIEW

Evaluation staff reviewed the grant applications of all three rounds of apprenticeship and pre-apprenticeship grantees. Staff also reviewed the grantee profiles, which regularly appear in the California Apprenticeship Newsletter (produced by SPR). Staff also reviewed documents gathered during site visits, such as OJT checklists, program's student handbook, and sample schedules.

ADMINISTRATIVE DATA

The evaluation team obtained aggregate numbers about program enrollment, completions, and demographics from the Division of Apprenticeship Standards (DAS) and grantees. SPR began receiving data about apprentices from DAS in February 2018. Prior to that, SPR collected aggregate data on the number of registered apprentices, completions, and apprentice demographics directly from grantees. SPR continues to collect aggregate data from PA grantees about the number of participants, completions, and participant demographics.

Appendix B: Site Visit Selection Criteria

SPR's evaluation team selected four grantees from the 2016 CAI cohort to feature in case studies—three apprenticeship grantees and one pre-apprenticeship grantee. The general goal of the apprenticeship case studies was to illustrate how grantees identified employers interested in the apprenticeship model and worked with them to create new RA programs. The goal of the PA case study was to illustrate the role of PA programs in the apprenticeship landscape. The study team selected 4 from among the 24 grantees using the following criteria:

- **Type of grantee**. We selected at least one grantee from each of the three types of CAI grants: New & Innovative (n=14), Accelerator (n=2), and Pre-Apprenticeship (n=8). New & Innovative grants are intended to support the creation of sustainable apprenticeship programs approved by DAS. Accelerator grants are also intended to help grantees create sustainable apprenticeship programs approved by DAS, but these grantees were further along in the process and already had an employer partner interested in apprenticeship and/or had begun the DAS registration process. Pre-Apprenticeship grants are intended to create programs that prepare individuals for careers in occupations that utilize an apprenticeship training model. These grants are also intended to help diversify the pool of applicants for apprenticeship programs.

- **Success of implementation**. We selected grantees that were successful in implementing their programs. We considered Accelerator and New & Innovative grantees successful if they had employer partners secured early in the grant period. This enabled them to begin implementing their programs sooner and allowed the study team to conduct site visits to learn about the programs during the grant period. We also considered the level of employer involvement, selecting grantees where employers played an active role in the program design phase (e.g., curriculum development). We considered Pre-Apprenticeship grantees successful if they demonstrated a strong connection to an RA program. We also considered the extent to which Pre-Apprenticeship grantee programs were serving underrepresented populations. Data about the success of grantee implementation was collected through interviews conducted during the sixth month of the grant period.

- **Geographic variation**. We considered the geographic location of grantees to ensure representation from both rural and urban areas of California. This was a secondary selection criterion as compared to the type and "success" of grantees.

- **College partner role**. To ensure that some of the case studies featured programs where a community college was conducting employer outreach and delivering the classroom training component, we considered the variety of partners involved in each program and the extent of their involvement. This was intended to help us learn about the role of community colleges in program implementation.