Before Audrey Collins joined an after-school career-mentoring program in Oregon, she wasn't sure what career she'd pursue after high school.

The 18-year-old, a new graduate of Grant High School in Portland, knew she liked math and had thought about mechanical engineering but admitted that she "honestly had no idea what that meant."

That changed during her junior year when she decided to take part in the ACE Mentor Program. (ACE stands for architecture, construction, and engineering.) The not-for-profit organization was launched in New York City in 1995 by 17 companies in those fields. Today, more than 9,000 students from 1,000 high schools across the country participate in the free after-school program.

Programs like ACE are part of a growing interest in career and technical education, or CTE, in high schools across the country—both in school and after school. In Portland, as in many other districts, the push to increase CTE offerings is partly coming from leaders within the business community and the trades, who see it as a way to keep the pipeline into their professions flowing with workers who have the right job skills. The after-school option gives students who are already taking CTE classes something extra, while permitting students in regular classes to try on careers to see if they fit.
"After-school programs are great spaces to provide the skills that we're hearing more and more that employers want," said Jillian Luchner, the policy manager at Afterschool Alliance, a national advocacy group. "Employers are frequently mentioning that they're looking for people to be able to work in a team, to problem-solve, and to communicate well, especially among their new hires."

Besides giving students an entry-level view into a wide variety of construction and design-related careers and teaching soft skills, the after-school program takes them out of the school and into the workplace.

"They're working in teams on a project with a deadline. They're working with people who come from a lot of different backgrounds and experience levels, and they have to learn how to work together quickly and effectively and understand how their part of the project affects the whole," said Susan Nielson, the interim executive director of Oregon's ACE program.

'Harnessing' Talent

In Portland, ACE is primarily open to juniors and seniors. From January through May, ACE students meet once a week for two hours with their professional mentors from local architecture, construction, and engineering firms. The meetings usually take place in the mentors' downtown offices. Students work in teams of 10 to 13 on a building-design challenge and have eight to 10 mentors across the three ACE fields assigned to them.

"There's a lot of need for really talented young people to enter the industry, and it's a really good way to do outreach to high schoolers who are maybe not sure about what they want to do and how to harness their talent," said Holly Snow, an ACE mentor and an estimator at JE Dunn Construction in Portland.
That was the case for Audrey. Participating in the program led to a paid summer internship with Portland’s Anderson Construction and plans to one day head an architecture firm or construction company that focuses on sustainability.

"I've gotten a really good grasp on what the different industries are, and what kinds of jobs you can have within them, and how they work together in a way that I don't think any classes at your typical high school offer," she said. She received an $8,000 scholarship from ACE and plans to attend Oregon State University to major in construction-engineering management.

**From ACE to PACE**

While the work students do in ACE is conceptual, another after-school program in the district gives students the opportunity to work with their hands to build a project. Jan Osborn, the district's career and technical education program coordinator, calls it "giving them both sides of a construction story."

Modeled on ACE, the PACE program—short for the Plumbing, Air, Carpentry, and Electrical Mentorship Program—is a partnership begun in 2015-16 between the district and local leaders in those trades. It was partly in response to a shortage of workers in the construction trades, and many program graduates are headed to apprenticeships and two-year degrees.

Joel Gonzalez is a recent graduate of Franklin High School. The 18-year-old, who describes himself as a "hands-on learner," said he only knew he wanted to go into a trade before taking part in PACE.

"I wanted to expose myself to which one I liked more and which one I could see myself working in," he said.

After learning about the four trades and doing hands-on work in each one over eight weeks, Joel decided on carpentry. He plans to start an apprenticeship in the field.

"I like the fact that every day you advance in the project," he said. "At the end of the day, you see what you accomplished, and the next day, you know what you have to get done."

Bridget Quinn is a PACE mentor and the workforce-development coordinator for the NECA-IBEW, or the National Electrical Contractors Association and the International Brotherhood of Electrical Workers, Electrical Training Center.

"There's been a real shortage of youth getting into our apprenticeship program," said Quinn. "The average age is about 28, 29 years old, so we're trying to bring that age down. We're trying to do that by getting into high schools and giving kids the opportunity to get their hands on some tools and some materials and see how satisfying it is to create things."

From January to March, students taking part in the program meet in the district's central office once a week for two hours with trade mentors. They work in pairs to build a wall and install electrical, plumbing, and sheet metal for air-conditioning vents.

"The very first night they're putting on a tool belt and starting to work with the tools, so it's not a sit-and-get program," said Jan Osborn. "I think that's why we really get the kids to come back week after week."

In addition to the hands-on work, the students learn about the apprenticeship programs that allow
students to "earn while you learn." As PACE winds down each year, students' parents are invited in to see their work and hear presentations about the career opportunities available to those who complete apprenticeships.

"The parent part is critical because that's probably one of our biggest barriers," said Quinn. "Parents tend to freak out a little bit if they hear that their kid's not planning to go to college, so we like to try to eliminate those fears and show them the wages and the benefits."

Students who complete apprenticeships earn credit toward an associate degree.

Proponents of the after-school programs stress that they are really about giving students freedom to explore careers when they can do so for free.

"If students enter the program and decide that they really want to go into these career fields, that's a success," said Kristen Kohashi, the program manager of Oregon's ACE program. "But if a student enters our program and decides that they don't want to do it, we also consider that a success, because then at least the student is making a more informed decision as to what they're going to do after high school."

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