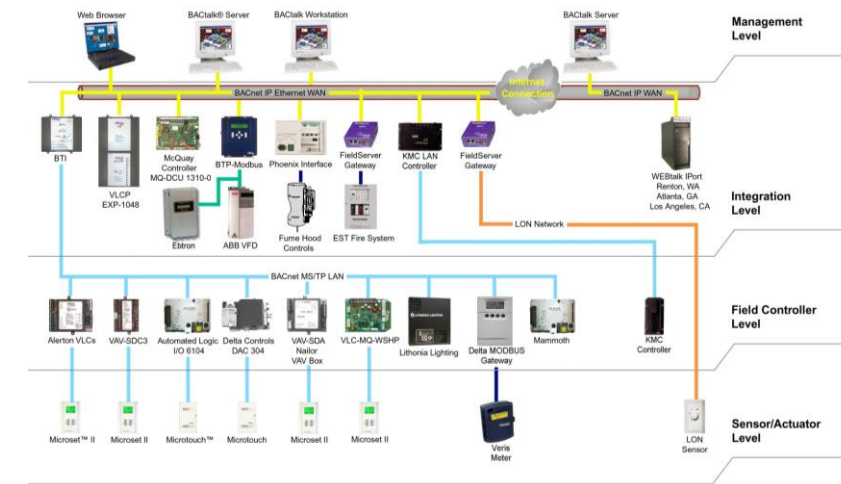


Western States Building Energy and Controls Apprenticeship (BECA) Program



✓ Do you want to get a jumpstart on your career?
✓ Do you enjoy solving problems and puzzles?
✓ Want to work at creating a sustainable world?
✓ Want to earn money while you learn?



**Lane Community College – University of Oregon ESBL
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DE-EE0009086 New Project**

Project Summary

Objective and outcome

To increase the numbers, preparedness, and diversity of the building energy & controls workforce) aby creating the first of its kind Building Energy and Controls Apprenticeship Program.

Team and Partners

Lane Community College:

Roger Ebbage, CEM Principal Investigator

Brenda Cervantes, Project Specialist

University of Oregon Energy Studies in Buildings Lab (ESBL)

Gwynne Mhuireach, PhD, Co-Principal Investigator

Stats

Performance Period: June 1, 2020 – May 31, 2024

DOE budget: \$499,996 Cost Share: \$125,822

Total \$625,818

Milestone 1.1.1: Expert Advisory Committee Assembled

Milestone 1.2.1: Apprentice Requirements Defined

Milestone 1.3.1: Apprentice Wage tiers defined

Milestone 1.4.1: Developed Work-based Learning Exp.

Milestone 1.5.1: Curriculum Aligned with AEE CEM

Milestone 1.6.1: Apprenticeship Details Drafted

Milestone 2.1.1: Requested scholarships from 10+ utilities

Milestone 2.2.1: Created Apprenticeship Program Website

Milestone 2.3.1: Distributed Recruitment Materials

Milestone 2.4.1: Established Training Agent Relationships with 4 Organizations

Milestone 2.7.1: 2.7.1 BECAjobs.com receives >100 hits

Problem

Demand for a well-trained and industry-ready building energy efficiency services sector (building energy and controls) workforce has increased dramatically over the past decade and is projected to see exponential expansion. Workforce education and training programs, however, are not keeping up with the demand, and employers indicate that graduates often do not have adequate preparation for real-world situations. Exacerbating this deficiency, relatively few high school students are aware of or interested in building energy and controls careers, despite high rates of placement in high-wage jobs.

Energy Efficiency (utility cost-effective measures in buildings)*

US Job Estimates 2020	65,313
US Job Estimates 2025	167,000
US Job Estimates 2030	283,000

*U.S. Energy Efficiency Potential Through 2040: Update on Potential for Energy Savings Through Utility Programs Across the Nation from the Electric Power Research Institute

Alignment and Impact

Outcomes!

New graduates (apprentices) will be well-prepared for immediate entry into building energy and controls careers. Our goal is that graduates will be able to reduce energy use in typical buildings by at least 30%, through re-commissioning and identifying opportunities to improve HVAC, lighting, and other energy consuming building systems

Success!

Success metrics include the number of students enrolled (50 in BP1, 75 in BP2) in the related training (classroom). Student demographic goals are 40% of the total number of students will be underserved and non-traditional energy employees (women and BIPOC).

Approach

Current Training Options and Shortfalls!

There are a number of sources available for energy efficiency training. The type, length, and location for training depends on the building sector - Residential, Commercial, and Industrial buildings and environment. Training programs vary in length and usually have limited On the Job Training(OJT).

A Novel Approach!

The Building Energy and Controls Apprenticeship (BECA) program is a one of kind opportunity for individuals interested in entering the energy efficiency and controls industry. The program includes related training (classroom instruction) and 2000 hours of paid OJT) which increases the student value to employers

Delivery!

The Related Training component (LCC degree program) of BECA is fully online and can be taken from anywhere in the US. OJT is arranged based on the apprentice's location and made available to the apprentice beginning the summer between the 1st and 2nd year of the his/her Related Training period.

Approach

Challenges!

The challenge for all energy efficiency related training programs is the limited exposure of the Energy Management field so individuals who are exploring careers, or doing a work search for a new career are not offered EM and an option.

Mitigation!

Apprenticeships are a known option to High School and Work Source Center councilors. By creating an apprenticeship program BECA is front and center to those looking for employment.

Marketing!

The BECA team has aggressively pursued Social Media marketing. Consequently, BECA has received over 150 enrollment and interest forms. The BECA team is also returning to in-person marketing opportunities which were halted during the Covid 2.5 shut-down years

Success! Increased Enrollment, Increased Employment, Increased Energy Savings.

Progress and Future Work

Budget Period 1.

Major Accomplishments!

- Developed an Oregon Registered Apprenticeship Program (10/21/21) in Commercial Building Energy Efficiency and Controls. Registered in Oregon as advised by the regional DOL manager.
- Aligned Related Training and OJT Competencies with the AEE CEM exam.
- Assembled a Western Region Advisory Committee.
- Recruited the number of students cited in the SOPO (48/50) with 40% underrepresented population target met!
- Acquired Scholarships for underrepresented students from Energy Trust of Oregon (ETO). The ETO serves as the Non-profit entity managing Public Benefit dollars for the Oregon private utilities (Pacific Corp., Portland General Electric, Avista)
- Secured an OJT administrator. BECA has contracted with NWApprenticeship to manage the OJT side of the apprentice progression through their 2,000 hours of training. They are responsible for making sure the apprentice is completing their hours and satisfying the competency requirements.

Progress and Future Work

Unexpected Obstacles - Ha!

COVID 19! The project intent was to create a national DOL Registered Building Energy (efficiency) and Controls Apprenticeship program. DOL recommended we first seek an Oregon Registered Apprenticeship program. We now are circling back to include other western states, individually.

Lessons Learned!

Be prepared for anything/challenges. Bureaucratic (DOL) Pandemic (COVID), Change in Team members

What Now?

Plans are to continue student enrollment (BP2-75) and develop OJT Training Agent placement.

And Beyond?

To continue to support Apprentices through the program and help other colleges adopt the BECA model of apprenticeship. Marketing, Marketing, Marketing!!

Thank You

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