Higher Education Collaboration for a Sustainable Community:
2-Years, 4-Years and Marketable Credentials

Webinar: 3/5/13
Supporting community colleges in educating for and building a green economy

www.theseedcenter.org
Co-Sponsor: Building Performance Institute

20 years

Building Performance Institute

For more information about BPI, visit www.bpi.org
Speakers

Linda Herman, Administrative Manager, City of Chico

Annie Rafferty, Director, The Training Place, Butte College (CA)

Jon Stallman, Director, Energy X-Change

Scott McNall, Ph.D., Emeritus Provost and Professor of Sociology, CSU, Chico
“Chico Energy Pioneers”
PG&E Innovator Pilot Program

- Chico Energy Pioneers Pilot Overview
- Community Education Program
- Workforce Development Training
- CSU, Chico Behavioral Analysis
- Scalable, Replicable, Sustainable
City of Chico
Linda Herman
Map of PG&E’s Innovator Pilot Projects
Chico Energy Pioneers
Project Goals

- Raise awareness about residential energy consumption.
- Understand how to achieve lasting energy efficiency and reduce GHGs through an integrated, two-phased approach:
  - Whole House Energy Assessment and Efficiency Upgrades.
  - Energy Management and Behavior Change.
Chico Energy Pioneers Pilot Overview

• Project team: City of Chico, Butte College, The Training Place and CSU, Chico.
• Workforce Development: 30 trainees
• CSU, Chico: 5 Undergraduate Students
• Targeted 100 single-family participants
Value of Partnerships to the City of Chico

- Limited staff available to implement a project of this magnitude (1 City staff person)
- Provided a high level of expertise and experience needed to complete the project
- Provided access to additional resources
  - For example: Butte College Workforce Development staff to make phone calls and coordinate classroom and facilities for workshops, students to meet with homeowners
Value of Partnering with the City

- Access to grant funds that may only be available to government entities.
- Garner support of local officials.
- Grant administration duties (monthly status reports, invoicing to the utility etc.)
- Ability to provide funding for the program while waiting for reimbursement.
- Development of the contracts and agreements to complete the project and to provide for liability insurance and bonding (6 contracts for this project).
Butte College, The Training Place
Annie Rafferty
Community Education Program

Recruitment
- Direct mail – door hangers
- 4 Evening and Saturday meetings held at local Elementary Schools
- Neighborhood Referral

Homeowner Education
- 5 workshops held at Butte College, The Training Place on Evenings and Saturdays
- Structured to prepare homeowners for audit
- Hands on demonstration of audit procedure and equipment used
- Release forms and surveys to gather input on needs
Workforce Training
Building Performance Certification

Trainings Programs
- Building Analyst
- Building Envelope

Participant selection
- Information sessions and applications submitted to pre-screen and select candidates
- Traditional email notifications to Clean Energy mailing participants and posted information on the Butte College Training Place website
- Engaged local Contractor Association newsletters, emails and networking events.
Workforce Training
Building Performance Analyst / Envelope

Participant Profiles

- 4 Realtors
- 3 University Graduates expanding certifications
- 8 Dislocated workers looking to build contracting skills
- 15 Professionals: 2 years – 30 years of experience
  - Licensed Contractors
  - Building Inspectors
  - Sub Trades
  - Engineers
Successfully trained 30 participants

- 56 hours BPI classroom training
- 16 hours of BPI field demonstration
- 40 hours of Butte College technical training
- 24 hours technical training refresher higher performing students requested
- 30-60 hours mentoring
  - commitment of 5 houses
  - higher performing students requested more houses

TOTAL HOURS: range 166 – 196 per student
Workforce Training
Building Performance Certification
Written Exam Outcomes

<table>
<thead>
<tr>
<th>Building Analyst Exam</th>
<th>Score</th>
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<tr>
<td>Building Analyst</td>
<td>82</td>
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<tr>
<td>Concepts of Building Science</td>
<td>66</td>
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<tr>
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<td>72</td>
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<tr>
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<td>78</td>
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<tr>
<td>Professional Ethics, Conduct, &amp; Communication</td>
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<td><strong>Total Class Average Score</strong></td>
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Building Analyst 90% pass rate
### Written Exam Outcomes

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**Building Envelope Exam 95% pass rate**
## Workforce Training

### Building Performance Institute

#### Certification Field Testing Results

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<tr>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Attempt (after 24 hours refresher training)</th>
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#### Total Certifications

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#### Profile of Students Earning Certifications

- **University Graduates**: 100%
- **General Contractors, Building Inspectors, Subcontractors, Engineers**: 86%
- **Underemployed/Unemployed**: 40%
- **Realtors – dropped out before testing**: 0%
Workforce Training
Building Performance Analyst / Envelope

Participant Feedback

- I should have been learning the concepts and application methods 27 years ago.
- Most difficult course... I have my masters degree and contracting experience.
- The whole house concepts are critical to our future of energy efficiency measures and retrofits to assist in a path to net zero.
- Thank you, Thank you, Thank you – This program will differentiate my business and homeowner confidence with certified professionals. I’m proud to become one of them!
**Instructor Feedback**

- Design and organization of course is the best in the State to support the trainee success.
- An excellent crossover of student profiles and backgrounds to collect learning performance data to determine optimal success for labor market.
- Basic math and sciences skill - required
  - Students with strong basic skills refreshed during theory portion of the training and accelerated during technical application training.
  - Students without basic skills struggled during theory and further experienced frustrations during technical application of the training.
Energy X-Change
Jon Stallman
Value of Field Mentoring

- Hands on technical learner
- Service learning connects student with the community
- Soft skill development with real people
- Variation of technical exposure to the hard skills in practice at each home
- Repetition to develop proficiency and quality of work output
Workforce Training
Technical Training Design

Best Practices

- Centralized Point of Communication
- Student proficiency assessment of basic skills, technical building experience, and level of soft skills
- Awareness of professional student work schedules
- Building trust with Homeowner - relationship and expectation of students in their home
  - Technical Education Credentialed Instructor and Program Manager Lead (dual role)
  - Only BPI Credentialed students in the home
- Qualifications of the test homes to prepare students for BPI test scenarios
Workforce Training
Technical Training Design

Best Practices

• Quality of data collection by students - develop a process to review end of day reports
  • Did they capture it all?
  • Is the data accurate?
  • Are there photos to show the story?
• Technical software capacity
  • Excel and reporting skills
  • Process guides for students to use on site
• Build technical skills for data analysis
• Build professional customer skills
Chico State University
Dr. Scott McNall
CSU, Chico
Behavioral Analysis

What information and in what form was needed to act?

- Participant demographics
- Prior level of engagement
- Initial barriers to change
- Preliminary findings
CSU, Chico Student Experience

Value for Chico State Students

- Learn how to do behavioral research and adjust the initial design to real-world barriers.
- Analyze data, test hypotheses, and provide valuable insights into the extent to which behavior can be changed.
- Student develop a skill set they can use in seeking jobs with corporations that have sustainability coordinators and those that deal in home-energy use.
- Participation in the project is not unlike taking another class, although one in social research.
Scalable, Replicable, Sustainable Recommendations

1. Develop a broad education, industry, government and university partnership to draw on the knowledge and skills you will need to execute a similar project.
   
   • Leverage local community college workforce development training resources: training, established industry certification relationships, communication, facilities and scheduling
   
   • Promote values of a University partnership
   
   • Develop relationships with your city partners and seek a person from the city to dedicate to the project.

2. Establish methods to provide participants – students, workforce trainees, partners and homeowners with communication
Contact Information

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QUESTIONS?
Sustainability Across the Workforce

Curriculum: How do you do it and what does it look like when it works?

April 10, 2013: Stay tuned to www.theseedcenter.org