

**Department of Construction Management
Women in Construction Management Summer Institute
FY 2016-2017 Program Review Funding Report**

Introduction, Background, and Institute Objectives

Last June, the Department of Construction Management received funding to support a 4-day summer institute to educate female high school students about professional careers in the construction industry, and to empower them to seek careers in male-typical fields. The Department felt this initiative was a well-aligned addition to our current recruitment efforts, particularly because while our overall percentage of diverse students in CM is increasing, our percentage of female students has not noticeably increased in the last several years. This is to our industry's and department's disadvantage; faculty and staff have observed that women in the CM major tend to be high achieving students. Based on 2017 department student records, women make up just 7% of the student population, but hold 25% of all CM student leadership positions, 40% of available seats in the competitive CM Cares Leadership Course, and have an average GPA of 3.28.

Studies have shown that the benefits of women-only programming are significant and far-reaching. A 2006 report by the Women's Resource Center found that in women-only spaces, women are "more comfortable to express themselves and articulate their needs, less constrained and intimidated when not exposed to the 'male gaze,'" and that "women-only leadership ensures women's needs are met, and women-only services deliver better outcomes than mixed spaces." Additionally, a 2007 study found that "girls and young women were enthusiastic about having time away from boys, and benefitted from having women leaders as role models." Similarly, "single-sex spaces encouraged girls to take more risks, express themselves, and develop their self-confidence" (YWCA, 2005).

Overview of Institute

The Women in Construction Management Summer Institute hosted 16 young women on campus from June 7-10, 2017. Seven participants attend one of three Alliance Partnership high schools, and nine participants attend another high school in Colorado. Six participants identify as Hispanic/Latina, and ten identify as Caucasian/White. Seven participants had previous construction experience through a Geometry in Construction course, and nine had little to no prior construction experience.

Throughout the week, the participants attended a wide variety of workshops facilitated by other female Construction Management alumni, including scheduling, estimating, sustainability, 3D modeling, and mixed reality software. They also participated in several construction activities, wiring and pouring concrete lamps, and creating coat hooks from industrial pipe fittings. The participants attended a site tour of the Ginger and Baker revitalization in Old Town, and culminated the week with a volunteer day at Habitat for Humanity. In the evenings, participants spent time with three CSU student mentors, and attended a dinner and panel discussion with 12 women from the construction industry.

Facilitators

Institute Coordinators

Kayla Boos, Student Recruitment Coordinator, Construction Management

Anna Fontana, Internship and Outreach Coordinator, Construction Management

Alliance Partnership Coordinators

Dr. Patricia Vigil, Director, Alliance Partnership

Amy Nortier, Assistant Director, Alliance Partnership

Institute Mentors

Jenna Richards, CSU Student
Jackie Terrazas, CSU Student
Abby Soberano, CSU Student

Session Facilitators and Industry Panelists

Kayla Boos, Student Recruitment Coordinator, Construction Management
Anna Fontana, Internship and Outreach Coordinator, Construction Management
Mike O'Reilly, CSU Instructor, Construction Management
Lindsey Blatz, Webcor Builders
Melissa Thevenin, CSU Ph.D. Candidate, Construction Management
Camille Betance, CSU Student
Kate Radley, Trimble
Joy Tennenbaum, Trimble
Ashleigh Widmier, Hensel Phelps
Kylee Samuels, Scheduling Consultants, Ltd.
Amy Powell, Golden Triangle Construction
Ara Massey, Hord Coplan Macht
Brett Brown, Dohn Construction
F.C. Bracken, Habitat for Humanity
Rachel Schanel, Oldcastle Precast
Dee Oswald, Kiewit
Maria Delgado, Ph.D. Candidate in Design and Planning at CU Denver
Wendy Merchant, Girls in STEM Denver

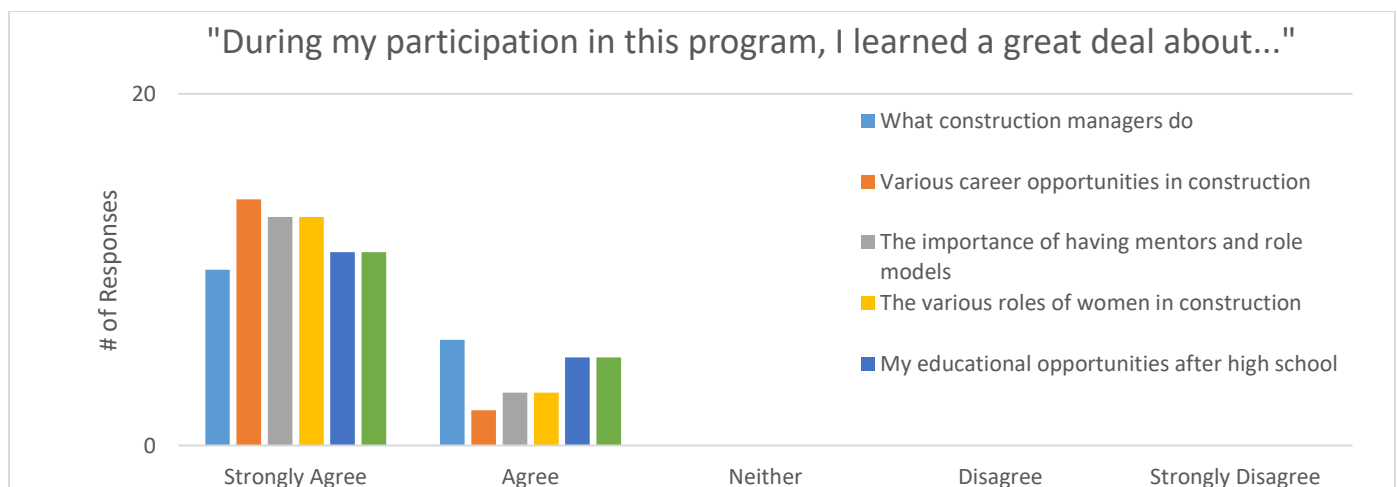
Research Faculty

Dr. Rodolfo Valdez-Vasquez, Construction Management
Dr. Mohammed Mehany, Construction Management

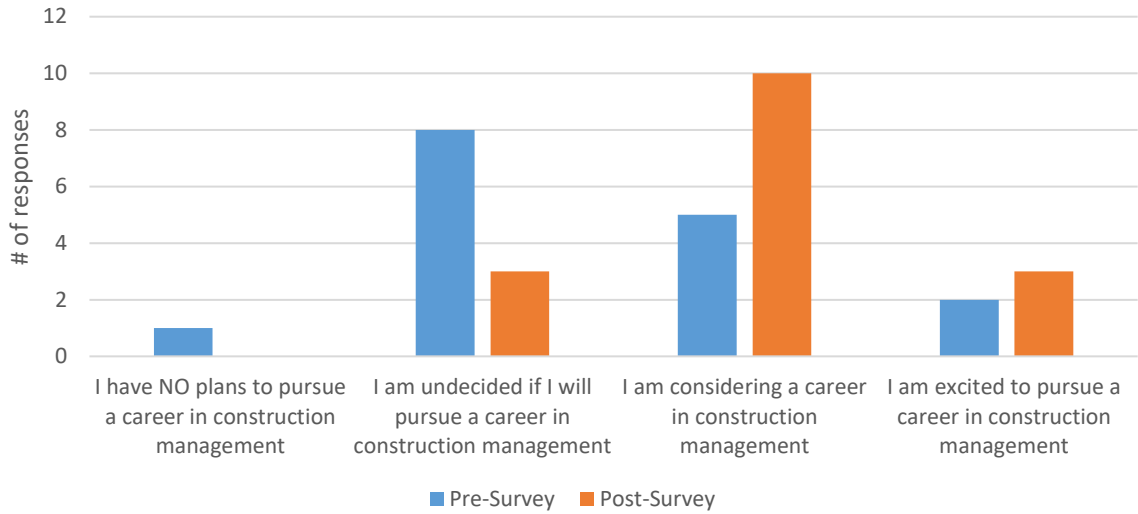
Evaluations, Feedback, and Institute Success

Participants were asked to take an intake and exit survey to assess the success of the program's goals: to educate young women about career opportunities in construction, to empower young women to pursue a career in construction, and to encourage young women to go to college after high school. Additionally, participants were asked to provide feedback after each session, to improve programming for future years.

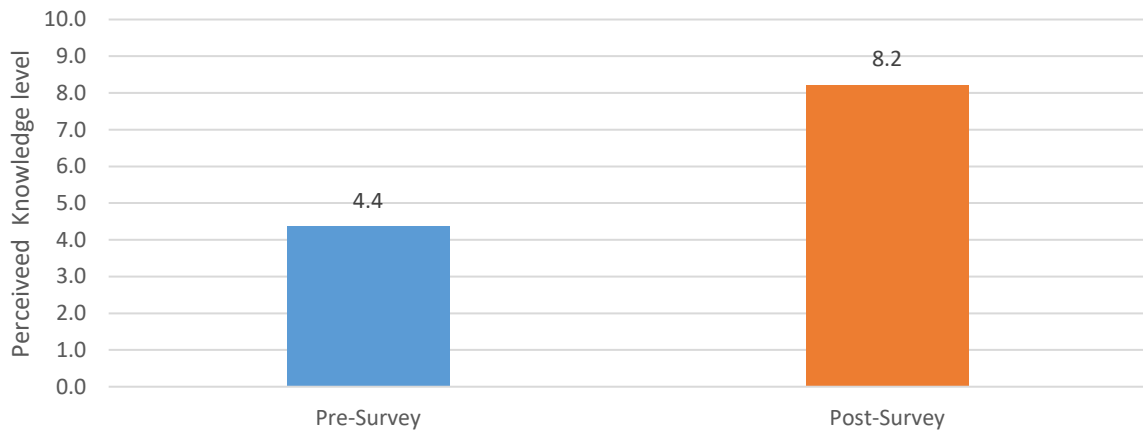
As shown in the following figures, responses from the intake and exit survey indicate a successful institute:



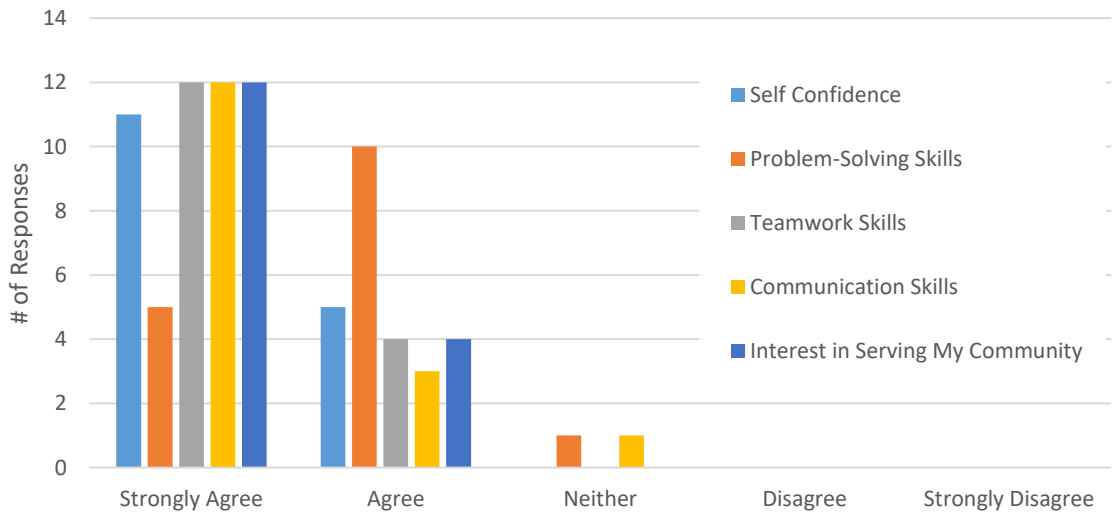
Considering Construction Management Career

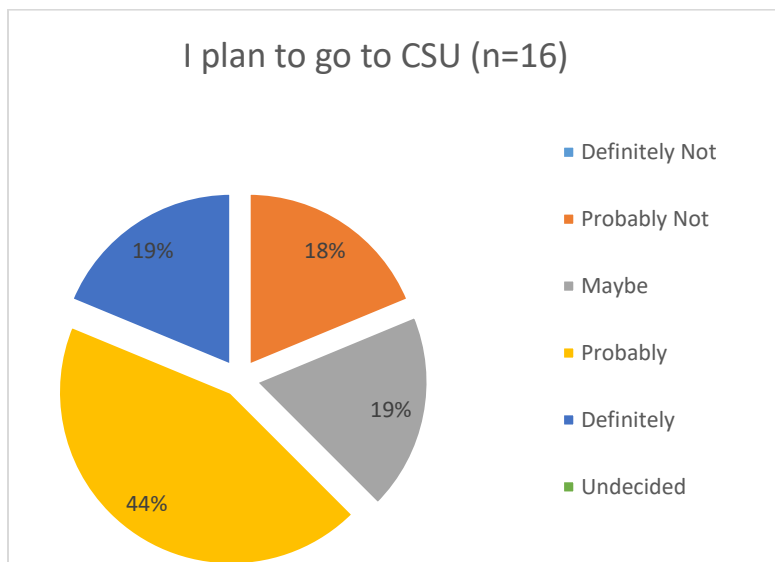
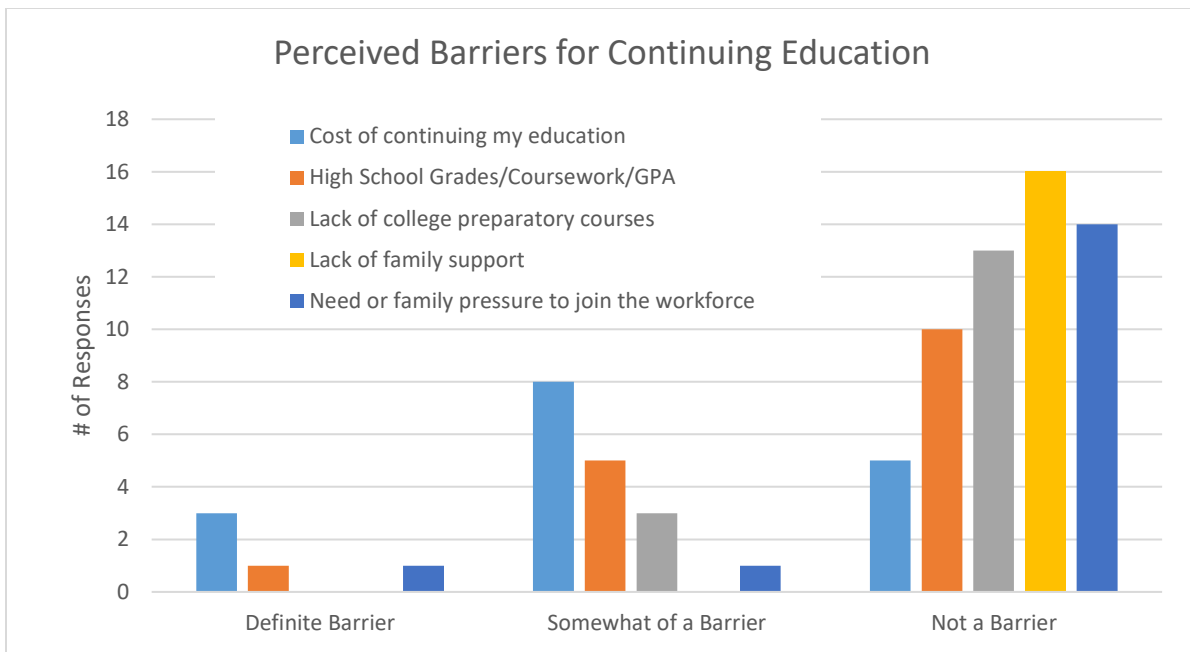


Current level of knowledge about Construction Management



"Because of my participation in this program, I have gained..."





In addition, 100% of participants felt welcomed and respected, 100% of participants felt more informed about leadership roles for women, and 100% of participants would recommend this program to others. Many participants even indicated a desire to do the Institute again next summer, potentially as a “junior mentor.” Participants also provided very positive feedback in the comments section of the post-survey:

- “This helped me to see what opportunities I have to choose from and don't let anything stop you!”
- “I had so much fun and learned a lot of things and really helped me get more confident.”
- “I would like to be involved in lending a hand in the camp next time.”
- “This has opened my eyes to consider this field more for my future, and also my skills have grown.”
- “I would love to be a part of this program in any way next year. I loved everything about it.”
- “[The institute] helps young girls know they have a choice to do a man heavy job and a voice to stand up for themselves.”

Support for Future Institutes

News of the Women in Construction Management Summer Institute has been extremely well received by many organizations. The Institute was featured in Source, and 9News picked up the story shortly thereafter. Institute Coordinators Anna and Kayla have received several calls from industry members interested in supporting the Institute, and CM Department Head Mostafa Khattab has been contacted by another department on campus hoping to host an institute of their own. Such support and interest demonstrates the real need for a program of this sort, and because of the success of this project, the department is currently searching for funding to host one institute per year for the next five years at a minimum.

Appendix:

The confidence gap: <https://www.theatlantic.com/magazine/archive/2014/05/the-confidence-gap/359815/>

Women's Resource Center 2007 Annual Report: <https://thewomensresourcecentre.org.uk/wp-content/uploads/whywomenonly.pdf>

CSU Source Article: <http://source.colostate.edu/summer-camp-introduces-high-school-girls-construction-management-careers/>

Channel 9 News Story: <http://www.9news.com/news/local/next/new-csu-summer-camp-hopes-to-inspire-girls-to-join-construction-management-industry/450719459>

Institute Agenda

	Wednesday, June 7th	Thursday, June 8th	Friday, June 9th	Saturday, June 10th
8:00 AM		7:30 breakfast - be at Gugg at 9	7:30 breakfast - be at Gugg at 9	Local Habitat Build
9:00 AM		Materials/Methods	Estimating	
10:00 AM			Scheduling	
11:00 AM	Check-in	Overview of plan reading.	Green Building/Sustainability	
12:00 PM	Orientation (Overview of Week, Expectations & Emergency contacts) Lunch, parents leave	Boxed Lunch on the oval	Boxed Lunch on the oval	Lunch and survey
1:00 PM	Pre-Survey Introductions Mentor led ice breaker	Computer lab - Overview of BIM – what is it, how is it used?	Hands On Activity: Strip Lamp Next activity - Industrial Pipe & Wood Coat Rack	
2:00 PM	What is CM? ACE Careers LEGO Bridge Activity	Presentation on different modeling technologies utilized in managing construction projects: BIM & Augmented Reality	Industrial Pipe & Wood Coat Rack Continued	Dessert Reception with family: Admissions info, slide show, student presentations
3:00 PM		Hands On Activity: Wire & Pour Concrete Lamp	Site tour w/ travel	
4:00 PM	Travel to dorm, quick break, clean up for dinner			Collect Projects & Check out of dorm
5:00 PM	Dinner in Corbett	Dinner in Corbett	Break	
6:00 PM	Mentor led activity/discussion	Nighttime activity Rec Center	Dinner w/ Female CM Alum Panel session	
7:00 PM				
8:00 PM				Nighttime activities
9:00 PM	Return to dorm	Return to dorm	Relax & pack	
10:00 PM	Bed	Bed	Bed	