Department of Construction Management
Women in Construction Management Summer Institute
2018 Institute Evaluation & Impact Report

Introduction & Purpose

With one of the highest placement rates and lowest gender wage gaps of all employment opportunities, construction management is an excellent field for women to pursue – yet they make up only a small percentage of the construction work force and an even smaller percentage of female students in CSU’s Construction Management program.

According to the National Association of Women in Construction, 10.3 million people worked in the U.S. construction industry in 2016. Of that number, just 939,000, or 9.1 percent, were women. According to the Bureau of Labor Statistics, women in the U.S. earn on average 81.1 percent of what men make, but in construction, women earn on average 95.7 percent of what men make – making it one of the lowest gender wage gaps of all industries.

With that in mind, in June of 2017, the Department of Construction Management hosted its inaugural Women in CM Summer Institute. A 4-day, 3-night summer camp 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 an issue as women are in high demand in the construction industry and faculty and staff have observed that women in the CM major tend to be high achieving students. Based on 2017-2018 department student records, women make up just 7% of the student population, but hold 18% of all CM student leadership positions, 13.4% of spots on the ASC Competition Teams, 36% of available seats in the competitive CM Cares Leadership Course, and graduate with an average GPA of 3.21 and salary of $62,000 – the same average salary as their male counterparts, and occasionally more.

Why Girls only?

Girls only programs help them build their sense of self and develop confidence by offering them opportunities to express themselves, be heard, and explore their world in a safe environment.

According to the Boys & Girls club of Canada, girls who are engaged in positive, female only programs, are more likely to complete school, attend college, serve their communities, and reach their potential for future success.

A study entitled “Shortchanging Girls, Shortchanging America” demonstrated, among many other things that girls’ self-esteem decreases with age, while boys’ self-esteem stays the same. Programs for young women provide a safe and healthy environment for girls to grow as individuals and build the self-confidence and skills necessary for them to succeed in their future endeavors.

Ultimately, we want these girls to become passionate about a future career in the Construction Industry. Will they need to work alongside boys eventually? Of course! But if we don’t provide them with a supportive environment to test the waters, they may never take the leap to check it out.
Overview of Institute Programming

The 2018 Women in Construction Management Summer Institute hosted 23 young women on campus from June 5th – 9th, 2018, a one-day expansion from our Inaugural 2017 Institute. Eight participants came from three different Alliance Partnership high schools, and one participant came all the way from Virginia. Fifteen participants identify as Hispanic/Latina, and seven identify as Caucasian/White. One participant had previous construction experience through a Geometry in Construction course at Loveland High School.

Throughout the week, the participants attended a wide variety of workshops facilitated by other female Construction Management alumni. Sessions included materials & methods, plan reading, scheduling, estimating, sustainability, 3D modeling & mixed reality, and a session specifically on building confidence. They also participated in several construction activities including testing the strength of materials, pouring mini-footings, trying out a variety of construction equipment at an ‘Equipment Rodeo’, wiring and pouring concrete lamps, and creating bookends from beetle kill pine and industrial pipe fittings. The participants attended a site tour of the new Richardson Design Center on CSU’s campus and culminated the week with a volunteer day at Habitat for Humanity. In the evenings, four CSU student mentors facilitated various activities including team building and time at the CSU Rec Center. The last evening on campus, the girls attended a dinner and panel discussion with twelve successful women from a variety of backgrounds within the construction industry, including project management, estimating, virtual design, marketing, human resources, engineering, and design.

Facilitators

Institute Coordinators
Anna Fontana, Internship and Outreach Coordinator, Construction Management
Jennifer Fyhrie, Student Recruitment Coordinator & Academic Advisor, Construction Management

CSU Student Mentors
Kathia Castro
Abby Soberano (2nd year mentor)

Graciela Chairez (CM Student)
Jackie Terrazas (CM Student, 2nd year mentor)

Session Facilitators and Industry Panelists
Anna Fontana, Alumni and Internship and Outreach Coordinator, Construction Management
Jennifer Fyhrie, Student Recruitment Coordinator & Academic Advisor, Construction Management
Melissa Thevenin, CSU Ph.D. Candidate and GTA, Construction Management
Kayla Utter, Alumni and Institute Co-Creator, Assistant Project Manager, Dohn Construction, Inc.
Amy Powell, Alumni and Project Manager, Golden Triangle Construction
Mike O’Reilly, Faculty, Construction Management
Nick Rubino, Alumni and Faculty, Construction Management
Travis Evans & colleagues, Customer Account Manager, Sunstate Equipment Rental
Maria Delgado, Alumni and UCD Ph.D. and GTA, CU Denver
Kate Radley, Product Manager, Trimble/SketchUp
Joy Tennenbaum, Product Manager, Trimble/SketchUp for Schools
Ashleigh Widmier, Alumni and Project Manager, Hensel Phelps Construction
Kylee Samuels, Alumni and VP / Sr. Project Control Specialist, Scheduling Consultants, Ltd.
Ara Massey, Alumni and Director of Sustainability, Hord Coplan Macht
Dee Oswald, Human Resources Director, Kiewit

Research Faculty
Dr. Mohammed Mehany, Construction Management
Dr. Rodolfo Valdez-Vasquez, Construction Management
Evaluations, Feedback, and Institute Success

Participants were asked to complete 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 a male-typical field, to encourage young women to go to college after high school, and to generally build their confidence. Additionally, participants were asked to provide feedback after each session, to improve programming for future institutes.

Below are some of the results from the exit survey:

- 100% of participants enjoyed the WCM Institute
- 100% of participants would recommend this program to others
- 100% of participants agreed they gained self-confidence
- 100% of participants agreed that construction is a great field for women
- 100% of participants felt more informed about leadership roles for women
- 86% of participants agreed that they want to pursue a career in construction management (the other 14% were neutral, none disagreed)
- 100% of participants agreed that the workshops, activities and discussions promoted the advancement of their skills
- 76% of participants indicated that it is important to offer this camp as an all-female experience
- 67% of participants indicated the all-female aspect was a factor in their decision to apply to the institute

Written comments from the exit survey about participant’s overall experience and what they would say to other girls on the fence about trying the program:

- “They teach you more than just construction. It's also about being confident and learning to love yourself.”
- “It is extremely empowering and really teaches a lot about the industry.”
- “It’s a great program; a great opportunity. And it helps open your mind too.”
- “It helps women know they can do anything.”
- “We all get to come together and help one another out.”
- “Females get better self-esteem and feel more confident to go take a career in construction management.”
- “Go for it. Even if CM is not for you, you will leave the program knowledgeable, confident, and with tons of new friends.”
- “I would recommend this program because it’s a really good learning experience, not only about construction management but about lots of other things. Many interesting skills are given here. Really fun and met really cool people”
- “At the beginning of camp, [being all-female] didn’t seem as important, but after some time, the amazing mentors and inspiring women we met changed my opinion. It is important for girls to meet inspirational women and be exposed to a positive, all girl experience.”
- “I would love to come back next year! I learned SOOO much!”
- “I LOVED IT!”
2018 Institute Support

- The Beavers Charitable Trust was the main institute donor
- Milwaukee Tools & Colorado Association of Mechanical & Plumbing Contractors donated stocked tool bags for each of the participants
- Sunstate Equipment provided the ‘Equipment Rodeo’ experience
- Trimble provided the Mixed Reality experience
- U.S. Engineering provided industrial pipe for one of the hands-on activities

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 an article in CSU Source, and CSU’s social media team picked up the video from the article, and placed it on the CSU Facebook page. Within one-week of its posting, the video had over 7k views and several supportive comments.

Institute Coordinators have been contacted by many industry members interested in supporting and/or getting involved with 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 programs of this sort, and because of the success of this project, the department is confident in its ability to secure industry funding to support this experience for years to come.

Institute Media Coverage:

Women in Construction Management Summer Institute Website: https://cm.chhs.colostate.edu/students/undergraduate/wcm/index.aspx
CSU Source Article 2018: https://chhs.source.colostate.edu/csu-expands-annual-summer-camp-that-introduces-girls-to-construction-industry/
CSU Source Article 2017: http://source.colostate.edu/summer-camp-introduces-high-school-girls-construction-management-careers/

Related Research and Articles on Women’s Programming:

The confidence gap: https://www.theatlantic.com/magazine/archive/2014/05/the-confidence-gap/359815/
The importance of Girls-Only Programs – Boys and Girls Club of Canada: http://www.stalbansclub.ca/blog/2016/03/17/the-importance-of-girls-only-programs/
As shown in the following charts, responses from the intake and exit surveys indicate the institute was successful in meeting its goals ‘to educate young women about career opportunities in construction, to empower young women to pursue a career in a male-typical field, to encourage young women to go to college after high school, and to generally build their confidence’.
### Plans to Pursue a Career in Construction Management

<table>
<thead>
<tr>
<th>Plans to Pursue</th>
<th>PRIOR TO participating in the WCM Summer Institute</th>
<th>AFTER participating in the WCM Summer Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO PLANS</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>UNDECIDED</td>
<td>23%</td>
<td>16%</td>
</tr>
<tr>
<td>CONSIDERING</td>
<td>55%</td>
<td>58%</td>
</tr>
<tr>
<td>EXCITED TO PURSUE</td>
<td>23%</td>
<td>26%</td>
</tr>
</tbody>
</table>

### Perceptions of Construction Management

<table>
<thead>
<tr>
<th>Perception</th>
<th>PRIOR TO participating in the WCM Summer Institute</th>
<th>AFTER participating in the WCM Summer Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTRUCTION MANAGERS ARE SMART</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>CONSTRUCTION MANAGERS ARE STEWARDS OF OUR COMMUNITY &amp; ENVIRONMENT</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>CONSTRUCTION IS A GREAT FIELD FOR WOMEN</td>
<td>95%</td>
<td>100%</td>
</tr>
<tr>
<td>CONSTRUCTION IS A PRESTIGIOUS PROFESSION</td>
<td>52%</td>
<td>81%</td>
</tr>
<tr>
<td>CONSTRUCTION IS COOL</td>
<td>91%</td>
<td>100%</td>
</tr>
</tbody>
</table>
During my participation in this program, I learned a great deal about...

- What construction managers do
- Various career opportunities in construction
- The importance of having mentors and role models
- The various roles of women in construction
- My educational opportunities after high school
- How additional education can help me achieve my career goals

Because of My Participation in This Program, I Have Gained...

- Self Confidence
- Problem-Solving Skills
- Teamwork Skills
- Communication Skills
- Interest in Serving My Community