

# A Study of Career Path Interest Amongst CM Students at Cal Poly San Luis Obispo

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With the labor shortage being experienced in the modern construction industry, it is important that office and field management personnel stay balanced to support the gap in skilled labor. However, for the students of Cal Poly San Luis Obispo, there is a trend that students are more interested in pursuing a career path in Office management, specifically that of a Project Manager. This paper determined the lack of interest in field management career path choice, specifically that of a Superintendent, by surveying the Junior and Senior students to gauge their career interests. It is concluded that there is indeed a trend towards the Project Manager route as opposed to the Superintendent route. The influential factors for student decisions are identified as: industry experience, the Cal Poly Construction Management program curriculum, and job responsibilities of each position. Minor influential factors are also considered, such as parental backgrounds and student construction sector interest. Repercussions of the research results are discussed in conclusion, with future issues of safety, higher project costs, schedule issues, and office stress being the top concerns. Construction Management Skills Training is the main solution offered for these potential effects, and is discussed in the conclusion of this paper.

**Key Words:** Superintendent, Project Manager, Training, Labor, Student

## Introduction

Students at Cal Poly San Luis Obispo pursuing a degree in Construction Management generally pursue two main career paths after graduation: Project Manager, or Superintendent. These are the basic positions that most students will be looking to pursue at the beginning of their careers as they learn more about the industry and what kind of work they want to specialize in. These two positions are standard throughout the construction industry and serve as high level goals to shape a person's career. It appears that throughout the Construction Management department at Cal Poly San Luis Obispo, there is a trend that most graduating seniors are more highly considering working to become Project Managers rather than Superintendents. With field labor being in shortage in the current construction labor market, this observation is very intriguing considering the future of the industry. Office workers are very much important to the success of any given project, but with field labor being filled by less experienced men and women, it is important that there be a healthy balance among office and field leadership. This paper will identify the true trend in career path interest of Construction Management students at Cal Poly San Luis Obispo. First it is important to understand the current labor market in construction, as well as details about what makes a successful Superintendent and Project Manager in order to identify the differences between the two positions.

Labor shortage is a large up and coming problem in the construction industry that is only recently beginning to affect construction projects in select areas such as (California specific) San Francisco, Los Angeles, and San Diego. This shortage is causing an array of issues in the construction world, driving up project costs as workers can demand higher wages and projects are more likely to be delayed or scrapped due to the lack of skilled workers (Snook, Jenny, 2017). The shortage also comes from the aging construction industry; By 2020, workers 55+ years of age will account for a quarter of the US Construction workforce. A main catalyst for the shortage came from the financial crisis of 2009, where about 2 million construction workers lost their jobs. Unfortunately, most of these workers have not returned to construction after finding work in other industries. In present times, the number of young professionals entering the industry is not enough to make up for this shortage of skilled workers and number of aging/retiring workers (Snook, Jenny, 2017). It is more important than ever that young professionals equally

consider all construction career paths so we can reach a balance of efforts to soften the blow of this shortage as the industry catches up to its own needs.

It is beneficial to understand some of the major competencies necessary to become a successful Superintendent in order to comprehend the job requirements of the position. In a paper created by a professor from Washington State University and a professor from Colorado State University, they used exploratory research through surveys to determine the main competencies and attributes necessary to being a successful superintendent. Their research was conducted on professionals from various sectors of the construction industry including Commercial, Heavy-Civil, Residential, Mechanical, Electrical, and Metal Stud and Drywall. The surveys were sent to a variety of company positions in each industry sector as well, including Project Engineers, Project Managers, Superintendents, Vice Presidents, and Presidents. The results of the survey responses, agreed upon by all participants, included these skills in order of importance from first listed being the most important to the last being the least important are as follows: Ability to plan ahead, ability to schedule work activities, strong work ethic, ability to get along with others, leadership skills, reliable and responsive, strong values and ethics, understand safety regulations, understand construction materials, oral communication skills, broad construction knowledge, ability to work with diverse people, ability to collaborate, ability to build trust, reinforce behavior in others, detailed knowledge of construction, ability to “keep your cool”, time management skills, team building skills, and listening skills. (Gunderson, D. E., 2011). All of these skills packaged into and honed by a superintendent will make for a highly successful individual who is very valuable to the construction industry. “The [construction] job superintendent is like the conductor of a symphony orchestra. He must see that all elements are fitted together at the right time and sequence” (Diamant & Debo, 1988, p. 8).

In addition to knowing Superintendent competencies, it is also beneficial to understand the attributes necessary to becoming a successful Project Manager to understand the similarities and differences between the two positions. In a paper created by two professors at Arizona State University, they identified four main competency areas for PM's in terms of the needs in the near future of the construction industry. They developed these competency areas by collecting data from over 300 Project Managers through the use of games and thought-provoking exercises. All games were created and data validated by industry professionals, industry thought leaders, and academic experts. The areas concluded from experimentation were as follows: Technical/Virtual, Management, Cognitive, and Leadership. Technical/Virtual refers to the knowledge and skills related to the involvement or use of technology. This includes further skills in having a multitude of experience in various project management and construction disciplines and expertise in at least one, as well as a practical understanding of technology in order to use it effectively and create a cohesive team environment. Management refers to a set of activities, procedures, boundaries, and structure that allows an organization to achieve its goals in a disciplined way. This includes further skills in possessing keen business insight for practical and effective strategies, a successful understanding of project management, building knowledge networks inside and outside of the project team and organization, and continuously monitoring risk factors effectively. Cognitive refers to the intellectual process that enables one to learn from, make sense of, and disseminate information. This includes further skills in effective communication in terms of understanding and articulating complex concepts to a wide range of audiences, displaying emotional maturity in terms of self-control and empathy in business practices, and complex decision making through logical, in-depth analytical thinking. Leadership refers to traits designed to align, motivate, and inspire a team to act and achieve project objectives. This includes further skills in leveraging diverse thinking in project teams and beyond, building relationships successfully to create a cohesive network of clients and peers to efficiently achieve project/business goals, engaging others to foster teamwork and leverage the skills of others to achieve objectives, mentoring people to help those around themselves reach success and develop the next generation of worker, and build trust amongst clients and peers to become a successful leader that can be relied on. (Wiesel, A., 2015). The culmination of these skills creates a versatile Project Manager that will be able to deal with a diverse and continuously changing number of challenges, making the individual invaluable to the construction industry.

## **Background**

Many construction firms are now hiring superintendents based on character rather than experience. This is a practice new to the construction industry and may be overlooked by students coming out of University. “At one time, the guy who became a super[intendent] used to be a framer or somebody who came up through the trades” (Power, M., 2006). This mentality of tradespersons becoming the only superintendents is still a problem in the current labor market, and may be a reason for college-educated persons not entertaining the idea of pursuing a career path in

superintendency. After all, there is a lack of field experience possessed by college graduates that is a large mental roadblock to considering a superintendent position. In addition, another issue experienced may be the mindset that “super[intendent]s without some years in the field may lack the street cred needed to manage trades” (Power, M., 2006). Both of these examples are that of an old and outdated way of thinking that no longer applies to the current state of the industry, and will only further deteriorate the labor pool if it continues to plague the minds of young professionals entering the construction labor force. With the technological advancements that the industry is experiencing in modern times, industry professionals are now facing much more complex projects that require new skills that were not as necessary in the past, as outlined in the introductory paragraphs of this paper. What is happening is that the “project manager or superintendent is becoming more professionalized, whether it’s dealing with OSHA safety regulations, budgets or codes” (Power, M., 2006). As projects progress, each career position will be held to higher standards that will be more easily achieved with experience from two and four year universities. Eventually, having an academic background in a two or four year program may be a standard requirement for employment in the construction industry (for a managerial position or higher, at least).

### *Purpose of the Study*

The purpose of this paper will be to look at the career interests of Construction Management Juniors and Seniors at Cal Poly San Luis Obispo to see what their true career path intentions are. The objectives of this research will be to identify key factors that influence student choices, including student backgrounds and experiences. Further objectives will be to understand the repercussions of the results of this research, if any, and to propose potential solutions to said tentative repercussions. Key questions that will be leading this research are as follows: Is there a general lack of interest in the Superintendent career path among Construction Management students at Cal Poly San Luis Obispo? If so, what is the cause of this disinterest? What can educational programs/future employers do to regain CM student interest?

### **Methodology**

To assess the current viewpoints about career paths of Construction Management students at Cal Poly San Luis Obispo, an anonymous survey was sent out to all Junior and Senior students. This survey was limited to Junior and Senior level students because of the amount of experience these students should already possess as compared to Sophomore and Freshman level students. Typically, most CM students at Cal Poly will have accrued about 2-3 summers worth of industry experience by the time they get into their Junior and Senior years. In addition, career paths are not something that Freshman and Sophomore level CM students may already be thinking about, whereas Juniors and Seniors have a much more pressing need to determine or brainstorm what path they would like to draft themselves towards. The survey questions used in this study are as follows:

1. What year are you at Cal Poly?
2. Please Select the option below that best describes you:
3. Do you have family with a professional background in construction related fields?
4. If yes, how are they related to you?
5. What is the highest level of education achieved by your female parent or supporter?
6. What is the highest level of education achieved by your male parent or supporter?
7. What sector of the CM industry interests you most?
8. Are you more interested in pursuing a field position, an office position, or something else?
9. How much internship experience have you had?
10. Was your internship experience more geared towards the office or the field?
11. Are you more interested in the Project Manager or Superintendent career path?
12. What factors influence your intended career path choice?
13. Has the Cal Poly CM program influenced you toward a particular career path?
14. If you answered yes or maybe above, please explain how the Cal Poly CM program influenced you, and towards what path.

## Results and Analysis

The final survey was created via Microsoft Forms and distributed through a department wide email, courtesy of the Construction Management Department’s Administrative Coordinator. It received 35 responses in total, and the results are as follows:

Question 1: 22 Senior and 13 Junior Construction Management students. Solid balance of responses with majority older students nearing graduation within a year. These students should have a well-developed sense of career path goals.

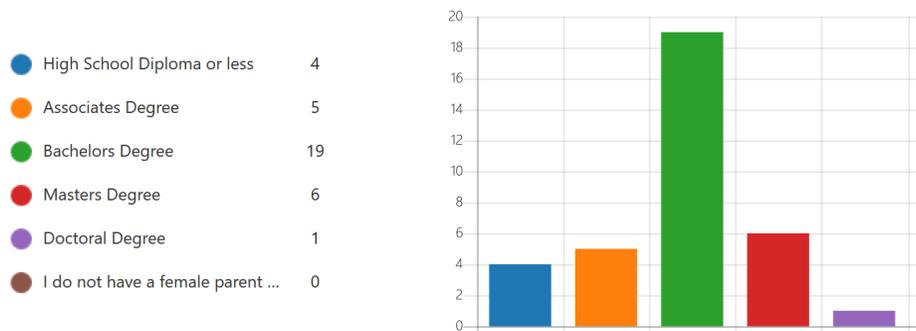
Question 2: 23 responders came into Cal Poly as Freshman Construction Management students. 5 responders are transfer students from other Universities. 7 responders changed majors into Construction Management during their time at Cal Poly San Luis Obispo.

Question 3: 20 students have family in construction, 15 do not. This may be a large factor for career influence and construction sector interest.

Question 4: Of the 20 with family in construction, 18 of them identified their family as being their fathers, with some listing Uncles, Cousings, Brothers, and Mothers in addition. The remaining 2 responders identified Grandfather and Uncles, respectively, as their only family in industry.

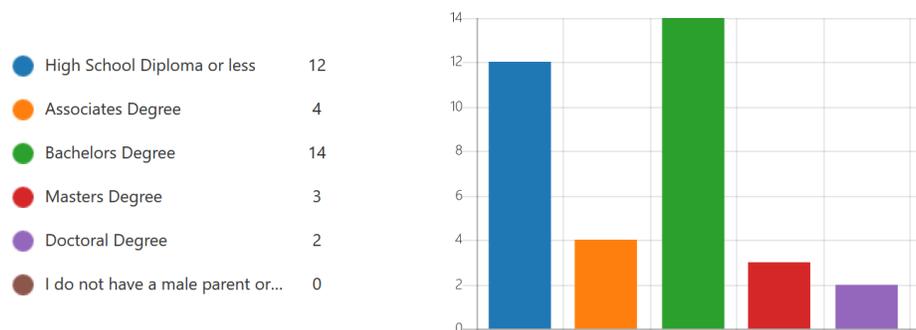
5. What is the highest level of education achieved by your female parent or supporter?

[More Details](#)



6. What is the highest level of education achieved by your male parent or supporter?

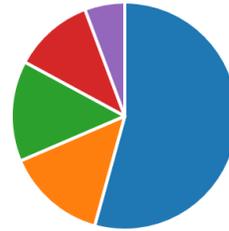
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7. What sector of the CM industry interests you most?

[More Details](#)

Commercial	19
Residential	5
Heavy Civil	5
Development	4
Other	2



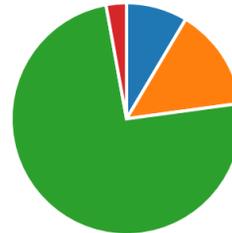
Question 8: Field position was specified as: Field Engineer → Assistant Superintendent → Superintendent; while Office position was specified as: Project Engineer → Senior Project Engineer → Project Manager. 21 students responded with interest in the Office route, while 11 students had interest in the Field route. Only 3 students responded 'Other,' and specified their choices to: Field position then transfer to office position, Executive, and Project Manager → Project Executive → Company Owner.

Question 9: 18 students have 3-4+ summers worth of internship experience under their belts, 16 students have 1-2 summers worth of internship experience, and 1 student has no internship experience.

10. Was your internship experience more geared towards the office or the field?

[More Details](#)

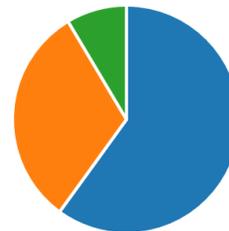
Office	3
Field	5
50/50	26
I have not had any internship ...	1



11. Are you more interested in the Project Manager or Superintendent career path?

[More Details](#)

Project Manager	21
Superintendent	11
Other	3



Question 12: Responses are as follows.

I like working with professionals such as architects and consultants, and don't like dealing with subcontractors on a daily basis.

Background in residential

Pay, day-to-day activities, personal strengths

Path to serve on a leadership board of a gc

Versatility in other careers

I enjoy the variety of field problems you encounter as well as working alongside the trades.

There are a lot of factors. One is whether or not my company will allow me to make the change early on in my career for PE to assistant super or Field Engineer.

I love just being out in the field with the action

I don't want to be at a desk 24/7, I would like to be in the field teaching my knowledge and experience to others while doing it safely and in a timely manner. I would also like to be involved in estimating some projects, but also be able to do field work as well.

Opportunity to experience different phases of building

Overall Work Life Balance.

Location, company, benefits, and type of work.

My experiences and the responsibilities attached to them.

My experiences at my internships and what aspects I found that I enjoyed or didn't.

I like to work in the field but feel that an office position is more conducive to the life I would like to build for myself. Becoming a PM after being a super gives you valuable skills to be a better asset to the team.

Getting that both in the field and in the office at my internship showed me that I was better suited for the office.

Salary, General Interest.

I really like building the creating and managing schedules.

I like the task of making sure everyone is in the right position to succeed. I used to play sports and as a captain I made sure everyone was in the correct place so the play could go on as planned. A project manager is similar in making sure everything is working smoothly and things go according to schedule.

Experience in construction field growing up

Coming from a family full of carpenters, I've always loved being out there building. As a super you are more in charge of the building of a job site.

My internships

Where I have the best chance of moving up into an executive position in the company.

Going into the type of building that peaked my interest.

Pride

After 1 field internship and 2 office internships, I have determined I enjoy management more than field. mainly because I like to work with money and bigger picture items

Internship experience

upward mobility and longevity

Experience on/off the field, projects types experienced

Family in construction

It is what I enjoy

Learning opportunities since I don't have a strong construction background

Experience with field and office work in internships.

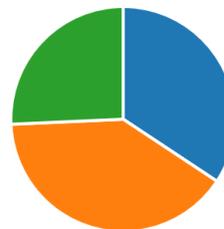
Some companies, PMs work about 50/50 in the field and in the office. That is what I am looking for in an internship/job.

Hours of work. I don't want to have to be on site at 6am and leave at 5pm.

13. Has the Cal Poly CM program influenced you toward a particular career path?

[More Details](#)

● Yes	12
● No	14
● Maybe	9



Question 14: Responses are as follows.

Cal Poly gears students towards careers as a project manager at a General Contractor, in my own humble, unbiased opinion.

I entered the program interested in custom homes and remodels. I decided to work in the commercial sector instead because of the job security, larger company culture, and the coursework applies mostly to commercial construction.

It's influenced me toward a PM path

Well before I got here I didn't really know the different career paths of construction, so after I was enlightened to that info then I knew I wanted to be a super.

Opened my eyes that there is not one exact path to take

Through Cal Poly I have been shown a lot about what goes on behind the scenes to calculating and estimating projects as well as certain methods to figure out scheduling and estimating of projects.

The cm program seems to be slightly leaning towards the office side in my observations and experiences.

My internships through cal poly have been in the commercial sector

I just transferred in this quarter so i haven't had much time at cal poly, but I have been getting lots of exposure to employers and different career paths through info sessions

Given that my family is not involved in construction, nearly all of my knowledge is rooted in the Cal Poly department. I began my interview process with Clark last year at an Info Session. During my internship with them this summer I realized how much I enjoyed working with and analyzing the project schedule.

Seeing different project managers at info sessions has made me become more interested in their roles.

They have influenced me to be a leader in the construction industry

The CM program is geared to set you up for being a project manager and I believe that is part of the reason I have chosen this path.

At Cal poly we are best prepared for a PM role

The CM a career fair has influenced me to pursue demolition as a career path. Without the CM program I would not have met the company I will be working for.

My lab experience has guided my interest through different types of construction. Various professors have gotten my excited about my career

CM program has not influence my career path, but in my experience it has influenced skillset to work more towards project manager over superintendent

The cal poly CM program is geared to teach us to be office management staff.

I have been influenced through my internships and the companies that recruit in the CM department

CM program has done a great job of showing me all of my options and helping me try and figure it out. The department has even pushed me to look into sections of CM that i normally would not have considered but ended up really enjoying.

It is interesting to note the increased amount of Male parents/supporters with High School Diplomas or less, while also considering the fact that 18 of 20 responders having family in construction identify their Fathers as this specified family. Overall, this survey came out about as expected. Majority Senior student responses, majority of students came into Cal Poly as freshman CM students. There is a majority interest in Commercial construction, likely due to the program curriculum and the companies who recruit at Cal Poly San Luis Obispo's Construction Management department. The experience was well balanced, being almost equal at 1-2 summers and 3-4+ summers. Most CM students at Cal Poly SLO begin to pursue and receive internships around Sophomore/Junior years. These companies that students intern at do a very good job at exposing interns to a balance of office and field experience. About 2/3rds of responders were interested in the Project Manager route as opposed to the Superintendent route, indicating a clear interest in Office Management over Field Management. The factors of influence commonly site experience as a clear reason for career path interest, with things like pay, hours of work, and work-life balance as secondary factors. These factors are logically sound, with experience being the main influence and external influences being less important but necessary considerations. Most students agreed that the Cal Poly CM program influenced their career interests as well, which is expected. In the early career of students who have limited industry exposure, curriculum learned in school is a type of supplementary exposure. This can be backed up with the majority of students being interested in Commercial construction, which is mainly what the CM department at Cal Poly focuses on.

## Conclusion and Recommendations

Among the Junior and Senior students at Cal Poly San Luis Obispo, it is clear that there is a trend towards the Project Management career path after graduation, as opposed to the Superintendent career path. The main reasons for this gap in interest stems from the experience that students accumulate through internships, the Cal Poly Construction Management Curriculum, and the job responsibilities of each career path. Although there may be other factors such as Parental backgrounds and generational views on the positions of PM and Super, it is reasonable to conclude that the aforementioned factors are the biggest influences on student decisions. This is a not necessarily a problem in current times, but when looking at the future of the industry while considering the labor shortage being experienced, this is a potential problem that should not be overlooked. Should there become a lack of field management at the same time as there is a shortage in skilled labor, construction projects nationwide may experience serious issues in design construction, and may find an increase in safety related issues in new building projects. Issues may also extend to projects falling behind schedule which would further drive up project costs and cause more management stress in the office to get projects back on track. With these types of results in mind, it would be best that the mitigation of these possibilities be handled by Construction companies rather than Universities. This is because broad educational programs like the ones followed by Universities serve to create a broad basis of knowledge in students that is further sharpened through experience and specific 3<sup>rd</sup> party trainings.

Coming out of school, Construction Management students, at Cal Poly San Luis Obispo that is, will have anywhere from 2-4 summers-worth of internships. Despite this, companies prefer and sometimes require more experience to handle the complexity of the projects they perform. To sharpen the skills of graduates and create a balanced interest in Office and Field Management positions, it would be best for companies to develop their own programs that aim to teach all new hires the skills necessary to perform job functions specific to the company itself. A good example of this is Shawmut Design and Construction: a nationwide Construction Management firm that recognized the gap in project complexity and employee experience. The leaders of this firm decided to be proactive about employee training, and created a program called Construction Management Skills Training (CMST). This three year program was design to expose newly hired employees to different roles in the company, allowing them to gain vital project experience and discover what their strengths are. This allows employees to develop skills in different project roles, creating a more well-rounded professional, before choosing their desired career path. The program consists of “three, one-year assignments as an Assistant Project Manager, Assistant Superintendent, and an Assistant Estimator” (Ghanem A., 2016). Employees who go through this training perform the duties required of each role in order to gain an understanding of what each position does, and to build their experience for the future. A program like this helps to season new hires who may not have prior experience, and works to assist them in creating a long term career path and goals for them to work towards. The benefits of training employees in this fashion allows employers to really have a hand in the quality of employee they are using in its project teams, and helps to assure that all employees are prepared for the type of work they are performing. It also can increase employee satisfaction and happiness within a company since they would be more free and content in whichever career path they initially choose or work towards. Educational programs at Universities cannot teach experience like a person may get from the industry, especially with the large variety in project types and companies. Should more companies create programs to a similar affect as Shawmut Design and Construction, the construction industry as a whole could potentially benefit from a more balanced distribution of management personnel, and an increase in the competency of employees.

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