

Aaron Trujillo

Mechanical Engineering

Going to Guatemala, I wasn't really sure what to expect. I knew there would be hard physical work at high altitude, but that's not a novel experience for me. I also expected great food and stunning colonial architecture. These things are fairly easy to mentally prepare yourself for, and are easy things to get excited about when travelling to a novel country. But what never ceases to amaze me when I travel is the connections I tend to make with the local people.

This connection began in the first few days in Vuelta Grande. My family comes from poor farmers on both sides, but the people of Vuelta Grande particularly resonated with my memories of my dad's grandparents. They were Navajo Indians that farmed a small patch of land outside of Yuma Arizona and lived in a small adobe house with dirt floors and without running water. It struck me that over the course of three short generations of hard work, my family has gone from dirt floors to myself and my sister having the opportunity to go to school and the ability to be the first in our family, either side, to graduate college. I see the same path for a lot of the families in Vuelta Grande. Kids such as JJ are working very hard not just for themselves, but in order to carry their entire families into a better life.

Facing people in extreme poverty can be an entirely humbling experience, but this trip was different. The first time I encountered large-scale abject poverty was in Vietnam. Throughout the country side, millions of people work in beyond-arduous conditions just trying not to starve. This was a really difficult thing to rectify in my own mind because I was there on vacation and having fun while people around me were starving. Guatemala was a different experience because when I left I was able to look at the project that we had completed and know that we had made the community a better place.

This whole experience has inspired me to use my education to assist more people. I still have family living on reservations and are in a situation where they have basically no opportunity for upward social mobility and limited resources in a fashion similar to the people of Vuelta Grande. These people have a hard time understanding that they are able to leave the cycle of poverty because resources, from quality education to what we consider basic necessities, are in short supply or simply not available. I believe it is very important for these people to understand that education is the key to a better life and the best way to do that is to complete an education to show that it is possible. That is how my family went from a dirt floored house in the desert to having multiple college graduates in 3 generations, and will surely be the way that certain families in Vuelta Grande will be pulled out of poverty.



Andrew Marquez

Mechanical Engineer

The Guatemalan experience was a huge eye opener for me. I realized just how over protected we are here in the U.S. Everything in the U.S. is built to code we do not leave any room for failure, while in Guatemala if it works it's good was the motto the locals would say. In the rural areas, all you see is tin shacks that are used as homes, shacks that in the U.S. would not be safe enough to store tools. They do not provide much shelter from the elements unlike in the U.S. where everyone lives in mansions that are designed to keep the weather outside and keep heat inside.



Being a Mexican I was expecting to see a big difference in culture, but I was in for a huge surprise because the Guatemalan culture is different than that of the Mexican culture. After being there for a while I noticed they did not have many farm animals at all for me that was abnormal because when I am in Mexico I see farm animals all over the place. I soon learned the reason there wasn't many animals was the people migrated there from all over Guatemala because there used to be a huge coffee plantation. The migrated Mayans only had what they could carry on their back.

It was a great joy to see how much they respected their heritage and family values. To them showing respect to the elders is a common practice, even their language changes when you are speaking to an elder you use usted instead of vos. Showing respect to whom you are speaking to.

Being able to help this community in need was a blessing. Knowing that is community that has a six-month dry season now has a way to provide water to hundreds of families thousands of people. Because of Engineering abroad and dream volunteers the people have over 7,000 gallons of storable water, even though this is not a lot of water. The local government goes around and fills the tanks up with water tanks. Pretty much all the water tanks you see were put up by the Engineering Abroad crew. It seems like we are there only hope to have a local water source.

This experience opened my eyes. Engineering is a helping profession and I plan on using my skill to help those who cannot help themselves. Engineering can help people in many different by using renewable materials, making products more efficiently and longer lasting, and paying livable wages to whomever makes the product. These are simple gestures that will make this world a humanly sane place. This experience also gave me hands on working skills as an engineer would do. We had to come up with many different ideas of where and how to set up the water tanks. After we decided out of all the ideas which is the best for the application. Then we made our parts list and we got our materials and installed the tanks.

Ashleigh Ballas

Mechanical Engineering

As a new student to the STEM side of campus, I attended my first STEM orientation meeting. There, some students had just gotten back from Guatemala and shared their amazing stories with us. This was the first time I was exposed to Cabrillo's engineering abroad program, and I was definitely intrigued. I told myself that I would apply one of the many years I had ahead of me.

That year eventually came around in 2016. All my friends/classmates were applying, and they peer pressured me into doing the same. I had convinced myself that I would not get picked. I had no real world experience with anything that was relevant to the engineering field. I felt so under qualified. To my surprise, I was picked to be a delegate for the 2017 Guatemala Experience. Words cannot explain how ecstatic I was when I received that email.

Fall semester was spent preparing us for the country and culture, and well as some preparations for the project. Having spent some time volunteering at the Santa Cruz Homeless Services Center, I thought that I was prepared for the poverty struck country. Boy was I wrong.

It's hard to find the words to describe what I had seen upon arriving in Guatemala. The conditions in which these people were living in, made me feel sick to my stomach. Literally. Never in my life had I been approached by a child begging for money. While in Guatemala, it became a regular occurrence. As I spent more time in the country, I found that it was becoming increasingly harder to complain about anything. I remember getting pissy about how cold my room was at my homestay. Then I started to think about how many people don't have a bed to sleep in or even a roof over their head. How many people go to sleep on an empty stomach. My state of mind was beginning to shift. I was starting to realize how spoiled I am in Santa Cruz. I've never had to worry about where I was going to sleep any given night. The only time I have gone to bed hungry was when I was too lazy to walk to the kitchen and make something to eat. Now that I'm back home, I'm trying to complain less. When I catch myself starting to complain, I think of all the struggling victims of poverty that I had encountered while on my trip in Guatemala. It helps to put things back into perspective for me.

While working on the project in Vuelta Grande, I felt that I was doing more physical labor than actual engineering. I was happy to help supply water to the little village, but I wanted to do something bigger and grander. It wasn't till Brandon calculated the number of gallons we added to their water supply that I began to realize that it wasn't necessarily about the water. It was the time we were saving them from going and fetching the water. By bringing the water closer to them, they no longer have to spend hours a day walking miles to go retrieve water. From what I could see, this task was saved for the children and mothers. I can only hope that the time they were saving can be used for bettering themselves, in whatever form that may be. Maybe the



children can now attend school, and the mothers can learn skills that may help bring in income. Coming to this realization made me so much more proud of our work and accomplishments.

As much physical labor as I did, I learned a lot along the way. My main project was connecting the pvc piping from the water well to the schools storage tanks. I was fascinated to learn about all the different types of valves that can be used. And let's not forget about the PVC glue that looked like a blueberry lollipop that I wanted to indulge in so badly! But Aaron insisted that it would be a bad idea.

Aside from the piping, Haley taught me a lot about electrical, considering we had to run electricity down to the water pump in the well. It was neat being able to take concepts that I had learned in physics and be able to apply them outside of a terribly worded textbook homework problem.

Being able to aid with the electrical portion of the project sparked an interest in me. I've never worked with electricity before, and I found it to be a lot of fun!

I gained so much from this whole experience. I got to work in a group filled with intelligent people, which has helped me to be more patient and to be a better listener. I learned so much from my team mates, from breaker buses to float valves. Aside from all the hands on experience I received, my biggest take away from the trip is my new outlook on life. This excursion has taught me to not take anything for granted. I am so fortunate to be able to attend school full-time and live a mellow lifestyle. I am so lucky to have a roof over my head, clean drinkable water, and accessible food. I hope as a future engineer I can continue to work on such projects and bring quality to other people's lives.

Caroline Bannerman

Electrical Engineering

This trip was unlike any other trip I have taken before it. First of all, I have only left the country without my parents a handful of times, and each time was to England, where I know my way around really well. I have never been to Guatemala or Central America for that matter, so this was going to be extremely new for me. I didn't know what to expect at all, but I had decided to plan on not having any expectations, because that way no matter how the trip turned out, I would have enjoyed myself. Besides, the whole point of the trip is to be of service to others, so no matter what, I would reach my main goal of the trip. Some other outcomes I was hoping for was some serious Spanish improvement, and to just float around with the rest of the group as best I can without any expectations.



The project was a constant learning experience. I have never had hands on experience with any engineering or construction project before, so I knew my job was so watch and learn and pay close attention. I was really excited to learn that Hayley has done so much electrical work in the past, as I am an electrical engineering major. I was able to learn so much from her, and I really appreciated that she took her time with teaching me and was really patient with me. She also gave me many, many opportunities to make decisions and problem-solve for myself before offering her opinion. I learned a lot more than I could have even hoped for and it definitely reignited my passion for engineering. After this last semester, I found myself wondering if this is the right path for me. My classes were more difficult than ever, and I was starting to lose a lot of steam, and I was hoping that this project would inspire me again. After having an opportunity to meet the families that we have impacted, I really feel like this is the right profession for me. I know that I want to be of service to others, and I love using my mind to problem-solve. I always knew engineering to be a “helping profession”, but I have never gotten to see such a direct and instant impact that it can have on such a large scale. To me, helping a community in that way has such a domino-effect. We helped bring water to families, which meant that their children don’t have to be responsible for collecting water from so far away anymore. This means that they can go to school and have an opportunity to receive an education, and because we were also able to make their school ore functioning, the teachers can focus on teaching. These educated students can then use their knowledge to help others inside and outside of their communities as well. Who knows, we may have even inspired a few of the children to become engineers!

The second week felt like a blur. One minute we were here, and the next minute we were there, and that is how I love to travel. I noticed some of my friends were starting to get a little burned out, but I was loving the fact that I had no idea what was in store for me at any moment. I am so grateful for the opportunity to travel abroad to Guatemala with the Engineering Abroad Program and I believe this program is extremely special. I had the best time!!

Keenan Roop

Big Reflections on a Little Country

Traveling the world is an important part of my experience in the world and Guatemala has added to that. I always enjoy being able to see how people make decisions in other parts of the world. Clearly there are differences between different areas of the world but when we are able to carefully think about the implications of those decisions, we can see the rippling of details down throughout a culture. A difference I appreciated was construction. In America, construction is obstructed with regulation and fines and permits. In Guatemala the building process is much more closely related to the design process. I can see this being of a great benefit to the individual but detrimental to the society as a whole.



I liked what I saw of the libertarian ideas of property rights in Guatemala. Each man is secure in his property and person and the people of the community band together to resist government interference. The ability of the people to make a living anywhere is astounding.

I was also disappointed in some of the things I saw. These people have access to high speed internet, cheap food, and reasonably clean and consistent water supplies. They are ripe for a first world country revolution but the country is being buried in trash. It doesn't help that every few decades, the government or the church decides to kill a large percentage of the population.

The position of the church in Guatemalan society was more secular than I had thought it might be. In some societies that i have been in, the church is the community and everything revolves around the schedule of the church. I have been in other societies where religion is strictly not discussed with people outside of your family or with a member of the church. Guatemalan response to religion was more subdued. There was little enough discussion from the people about their church and they seemed willing and open to talk about the different aspects but they rarely brought forth thoughts on their own for us to ingest. The way Brandon explained it, the church declared that the people lost the last civil war with the government. I would have thought this would have created a large animosity between the population and the church, especially with the older population.

A similarity between Guatemala and the other parts of the world is the connection to nature. In Okinawa, it was very common for every house and most of the buildings to have fronts that were covered in plants. For the family homes, these plants were decorative or for food. In Guatemala, i noticed a similar connection to Nature. The evolution of the society was shaped in part by the aggression of the natural forest. It's simply not possible for the people of old to keep the forest cut back permanently with the tools they had. So each person made concessions for what plants they would keep and what they would remove. This leaves us with houses covered in flowers and fruit. This is something that i would like to see replicated in the other parts of the world. I am working towards this goal with things like farm wall as and vertical farming. It's all one big loop.

My experience in Guatemala gave me more opportunities to make connections between myself and the world that I inhabit. The connections between completely separated cultures

Margi Howard

Civil Engineering

Engineering Abroad Experience

In my life I never really thought I would get the opportunity to go on such a life changing trip as this. This trip not only changed me personally but also academically. This excursion to Guatemala was my first time outside the country as well as first



time visiting a third world country. It opened my eyes to how different my life is compared through the simplest things such as water and education. I believe that in the United States we take these things for granted because it is simply normal for us to have running water and attend school. Whereas in Guatemala, it is a privilege to have both of these amenities. The work that we have done in Guatemala shows how much a simple piece of equipment can open doors for the youth especially the women. I was amazed when I heard that our previous projects lead to an increase in the number of students especially that of young women. This feeling of helping a community in need will never vanish. Another very influential thing that I saw in Guatemala was how young the children started to take on responsibilities. For example, one of the girls I saw was maybe around 10 years bringing buckets of rocks to their house on the hillside along with a younger brother and baby sister. They all carried a massive amount for the age there were and I just could not believe it. Their childhood is based on the families' needs not on education like in the United States. This was an eye opener because when I was younger I believed that school was just a chore to occupy my day. But in reality it is an honor and a privilege. This also reminded me about how important family and my education are in my life. My family is my backbone always there to support me just like their family is for them. This is possibly why I became a little homesick on the trip because I wanted to share all these special moments with my mother father and brothers.

The trip to Guatemala also changed my future career goals. As you probably already know I want to eventually get my Master's in Civil Engineering. I still want to work within the United States but I have realized that I want to in some way give back to the community similar to as we did in Guatemala. I want to find people or areas that are suffering or have been hit with natural disasters and help them get back to their way of life. Although I stated that I want to work in the United States it would not stop me from traveling abroad again to help another community in need. I think if I went on another abroad trip like this it would still have to be a Spanish speaking country because I want to keep improving/implementing my Spanish as I did in

Guatemala. I eventually want to be fluent and that does not come without practice. This experience was both life changing personally as well as professionally.

Melissa Pardo

Aerospace Engineering

My experience in Guatemala was indescribable. It was my first time in Guatemala, in a different country not for vacation but for a more meaningful reason: To help a wonderful community. I always knew that I wanted to become an engineer because I love troubleshooting and understanding how things work. However, going to Guatemala allowed me to understand how really important it is engineering to the world. Engineers make things better and



improve the quality of our society, and that is exactly what I was able to do thanks to the engineering abroad program. I was able to not only have that exposure to the real world of engineering but also see with my own eyes the needs of many communities in this world. This trip brought to my life many more reasons to keep pursuing my engineering degree.

The project itself was not really what I had in mind before leaving the US. I thought we were going to have to do more design, preparation and such before actually doing it, but we learned that in Guatemala things are done differently, and also our time to complete the project was limited. In Guatemala people do not follow so many codes like here in the US, they think that as long as it works it is fine, which I found very interesting. Due to this, we performed our tasks in the best manner possible and were able to finish just on time. I was part of the well project and I was mainly taking care of the electrical pipeline and the installation of the timer that was going to control the water pump. It was my first time digging, measuring and cutting pipe, and working on a circuit breaker. It was pretty much my first time ever doing construction. The project was hard manual labor but everything was worth it. Every single minute of my work was worth it.

Working in an amazing team in Guatemala taught me that engineering is a helping profession and the world needs people like us. The children from Vuelta Grande taught me that happiness is not about how much you have, it is about the beauty of the little things in life. I will never forget the moment when we were testing to see if everything was working properly at the school and we got water from the well. I was extremely happy and even more when I realize that many children in Guatemala were going to benefit from our work. It was my favorite moment of the trip.

The engineering abroad program allowed me to learn more about myself and what engineering is really about. It also allowed me to merge myself with the beautiful Guatemalan culture and live this experience with one of my best friends and amazing, smart people. I understand that as an aerospace engineering major I won't ever be in direct contact with the community, but I hope that one day I can help more kids, more families to have a better life.

Mitasha Malhan

Mechanical Engineering

Before leaving for Guatemala, I was looking forward to the culture and work I was going to be surrounded by. I was aware of the similarities between Guatemala and my home country India; however, I did not realize how nostalgic it would be to visit a country that I had never seen before. The small town of Antigua was like towns where some of my relatives live. Furthermore, Vuelta Grande refreshed memories of summer vacations I spent at my grandparent's villages in order to stay in touch with the roots of the family heritage. I recall that the



lifestyle was demanding and people worked hard, much like in Guatemala. It served as a reminder that humans are capable of sustaining themselves in arduous conditions.

After coming back to Santa Cruz I noticed that I could stand the colder weather a lot better and if my housemates used up all the hot water for showering, I had no qualms about showering in colder water. This was neither out of pity nor guilt for having more resources and luxuries than the people in a developing nation. It was because in two weeks I had developed resilience by being in tougher surroundings just like more than half the people of the world that do so on a daily basis. It is admirable how humans are adaptive to changes around them and can become more robust as a response.

If such is the nature of people, then I believe that it should be constructively utilized rather than incapacitated. We should limit ourselves to the basic needs so that we are not using resources unnecessarily. Our resources should be primarily allocated to provide basic necessities of life for everyone before considering investing them for fulfilment of recreational goods and services. Fresh water, food, shelter and clothing are more important than having new phones manufactured and bought every six months.

It is just to fairly provide the fundamental requirements to people and I think that going to Guatemala and working there made me a contributor of that idea of providing an important resource to a community and affecting their lives. A small positive change can lead to a chain reaction of influencing several facets of life for people. Now, the children in Vuelta Grande can have more time to contribute towards education and women can have time to start a small business or even take a break and pick up some hobbies. When I was working at the job site, the thought that preoccupied my mind was that I am providing not just infrastructure for access of water but also another very important resource which is time. Instead of thinking about getting water, people of the village can now utilize that time to enrich themselves in person, social and economic ways.

Thayara Almeida

Civil Engineering

Being selected for the Engineering Abroad Experience was one of the best and most important accomplishments I've ever made in life. Twenty days in Guatemala didn't just alter the way I think about international development, it fundamentally reshaped my worldview. Compassion matters. Altruism matters. Self-interest matters too.

Joining the military has never been for me. How else could I contribute? There has always been something in my head



about public service and giving back and trying, incrementally at least, to make the world a slightly better place, while acknowledging that far too often America's actions abroad, however well-intentioned, do more harm than good.

Speaking frankly, I joined the Engineering Abroad in search of learning how to apply my engineering skills and public service; I was looking for a big challenge, an adventure and maybe even some chaos. One only lives once!

When I was granted one of the spots for 2017 Experience, I was excited (and nervous). There's no substitute for actually being "there" and having the opportunity to spend some time in some of the world's most fascinating places. This experience to me was about learning, sharing, humility and getting better, although it was also about sacrifice and struggle. It was about being open and honest that you don't have all of the answers, and that being humbled and open minded are very valuable traits when you are spending some time surrounded by people that have very little infrastructure and still manages to be happy and positive about adversities and life challenges.

One of the most useful things I've learned in Guatemala, was how to listen to other people, how to understand not just what someone thinks, but also why that person thinks what they do.

The Engineering Abroad Program is full of good intentions; although, every volunteer's experience is unique and different in its own way. Yet one must be aware that life as a volunteer in an underdeveloped country is a bit of a roller coaster...

During my experience, I had the opportunity to get to know each and every one of the team in a different manner. I became closer to some of my team workers than others;

I found complicity in some of my friends, and that made us very close. I worked hands on with an amazing team, on an awesome project setting up three water tanks, and digging a trench on the road so we could connect all the three tanks together. I had the chance to play with the kids and talk to the villagers; I stayed at a fantastic home family, experiencing their life style, learning about the community, and making friends that I'll have for life! And then there were those late nights: All the travel. Street food. Getting to know the newspapers. Learning about Guatemala's rich, complex history. Flirting in Spanish. Walking the streets of Antigua. The psychological challenges. Exploring the western highlands. Understanding, really understanding, what matters. It was a true adventure in every sense of the word!

As a future engineer, as I said at the beginning, this experience changed my life for better, and it is truly something I do look forward to work with. I believe I found my dream job! Engineering offers us the chance to make the world a better, safer and more exciting place, and as a future engineer I hope to help developing new technologies, work with sustainable projects, such as green buildings, renewable energy sources and efficient water fixtures. I am concerned about environmental issues such as climate change and pollution which are currently facing our world. I would love to work with underdeveloped nations (just like we did in Guatemala), and possibly teaching children in remote communities how to use natural resources wisely and how to minimize waste, which would benefit both the people and the planet.

I definitely don't feel very comfortable giving people career advice, even because I'm still trying to figure out my life. That being said, I do have one small piece of advice for people in their early twenties (should they ever ask me): join an abroad volunteer program, and never look back!

Don't listen to people who tell you that following your heart is foolish or an unwise career move. Dive headfirst into the journey with alacrity. Stare down those (reasonable) fears and then move on. Before you know it, your abroad experience will have come and gone. You'll be left with the memories and the people with whom you share those memories. Ten years on, you will still be acutely aware of all the good and the bad associated with that abroad experience. Yet by then, it's likely that you'll focus more on the former rather than the latter.

Tryston Cruz

Environmental Engineering

After returning from Guatemala, I realized three experiences that really impacted me as a student, a person, and an engineer. Those experiences included witnessing the cultural differences between America and Guatemala at our worksite in Vuelta Grande, visiting the cemetery in Chichicastenango, and talking with the locals during my extended stay.

Witnessing the Guatemalan/Mayan culture at our worksite in Vuelta Grande really ministered to my view of American culture. Throughout the project, I worked on the community water tanks overlooking all of Vuelta Grande. On a particular work day, our team suddenly stopped to observe a five year old boy and an eight year old girl. These children lived in the home above our worksite. We were surprised to watch them transport a pile of cinderblocks from the bottom of the hill up to their home. I saw these children running errands up and down the mountain side all day. But to see children lifting cinderblocks half their size with a smile on their face struck me. I considered my little siblings, and American children in general, who complain when they simply have to pick up their clothes off the ground. This bothered me. Why couldn't all Americans adopt this joyful attitude amidst their circumstances? Observing the Guatemalan culture encouraged me, as a person, to look beyond my circumstances and to take joy in all things.

After completing projects in Vuelta Grande, we ventured to Chichicastenango. While there, a small group of us decided to go visit the cemetery. Upon entering, we were taken aback by the variant colors throughout its boundaries. It looked like a celebration on top of a hill, and I considered colors as reflections of lives lost and remembered there. As we walked, I noticed that some of the graves were simple mounds covered in cement and paint. It was unsettling. Yet, I kept looking and noticed that most mounds were very small. Sadly, I realized they were children's graves. I didn't know exactly how these children died, but I could only suspect it was



due to malnutrition, infected water, and/or poor medical facilities/expertise. This bothered me immensely because all of these things could have been prevented. Witnessing these children's graves instilled a deep burning to persevere through my studies and experiences. Developing clean water systems, sufficient medical facilities, and adequate nutrition depend on it. Visiting the cemetery in Chichicastenango reminded me why and for whom I am an engineer.

During my extended stay in Guatemala, I had opportunities to speak with locals in Antigua. At Hostel Morenos, I spoke with Oscar, the front desk attendant. We learned a lot about each other and became good friends. Learning of his current financial situation and daughter's sickness, I felt led to pay for his daughter's medicine. I wanted her to be healthy, and for Oscar to stop worrying. Oscar was shocked and accepted my offer. He was ecstatically thanking me and thanking God. Although the medicine was only \$14, it made a huge impact in Oscar's life and mine.

Overall, my Guatemalan experience was remarkable. I gained new life perspectives by watching Guatemalan children joyfully at work. The unsettling experience at the cemetery in Chichicastenango inspired me to persevere in engineering. And, helping Oscar pay for his daughter's medicine empowered me and opened my eyes to poverty in Guatemala. I am grateful for the experiences and look forward to how it will continue to impact me.