

Daniela Lugo

**Graduation Year:** Junior

**College:** Engineering

**Major(s):** Civil Engineering

**Minors(s):** Catholic Social Tradition

**Scholar Group Membership:** No

**Did you received other funding for this project?:** Center of Social Concerns

**Could you have completed this project without CUSE funding?** No

**More details on CUSE funding assistance?** I currently attend Notre Dame on a full-tuition need-based scholarship and have a loan for every academic year. This means that investing any money out of pocket for any activity during the summer is completely impossible for my family. In addition, NDSEED fundraises money for the project (living and travel expenses for team members, as well as construction costs) through a letter writing campaign. However, being an international student, it was very hard to get anyone from home to donate. Therefore, without CUSE funding, completing the 8 week project in Nicaragua would have been impossible.

**Project Title:** Construction of a suspended footbridge in Terrero Sur, Nicaragua

**Project Location:** Terrero Sur, Nicaragua

**ND Faculty Mentor:** Dr. Tracy Kijewski-Correa

**Project Type:** Service-Learning, Eagan Fellowship

**Why did you undertake this project/experience?** Deepen your knowledge of a topic or issue, Career discernment and/or preparation, Internationalize your Notre Dame experience

**Did your funded experience help you:**

**[Deepen your understanding of your coursework or field of study]:** Very Much

**[Discern your interests and post-bac goals]:** Very Much

**[Become confident in your ability to set and achieve your goals]:** Very Much

**[Gain a more nuanced view of local, national, or global communities]:** Very Much

**[Improve your written and verbal communications skills]:**Very Much

**Tell us about your experience.**

Throughout the 2015-2016 academic year, I was part of NDSEED, an undergraduate student chapter of the NGO Bridges to Prosperity, which builds pedestrian bridges in the developing world. As part of the class, I was enrolled in the course "Engineering for International Development I" from the College of Engineering during the Fall and Spring semesters and attended the 2015 Bridge Builder Conference in Colorado. Through weekly team meetings, class and construction workshops, the team carried out the design, planning and fundraising for building a bridge in the rural community of Terrero Sur in Nicaragua. I traveled to Nicaragua and lived in the community for 8 weeks during the summer while we (Bridges to Prosperity, NDSEED and the Terrero Sur community) built the footbridge. My specific role in the project was to manage construction (labor, materials and schedule) as well as allowing communication (as a native Spanish speaker) between the project-trained mason (B2P employee), the

community and the Notre Dame team. In addition, I was also in charge of organizing logistics and the living situation given that several times, I was the only Spanish speaker on site.

This project, which is not limited to the summer immersion, provided me with valuable lessons that can be divided into two categories: professional and personal. On the professional side, I experienced a construction project not only from start to finish, but also in my own flesh. I was exposed to the many design considerations that need to be taken into account for a successful project and was also able to assume a leadership role. I learned important things about how to manage a construction site, always planning ahead of time and being ready for any eventuality. The ability to react when things don't go as expected is something that requires practice but is essential for any engineer or professional. One can be mentally prepared for things, but in real life, its always more challenging than what you see in paper.

Although, as an aspiring civil engineer with the hopes of working in international development this sort of project would be the best thing you could ask for to learn, I grew even more on a personal level. The friendships formed on and out of site are far beyond anything I would have hoped for. I learned to live a simpler life, one in which personal interactions take over a busy schedule. I learned about a society that is so similar to my own, but still has its own history that has shaped the people. I met people who are the perfect example of generosity and solidarity, people who made the whole idea of spending a summer volunteering to build a bridge seem insignificant compared to their acts of kindness. I have always heard from people involved in construction that once you finish a project you have been working on for a long time, you see it as your own and feel extremely proud. I felt proud, but not of myself, but rather of the whole team (NDSEED and the community) who were able to push through sickness, heat and uncertainty in order to complete a bridge that will make our friends' lives a lot safer and less complicated.

**Describe the impact this project had, both on you as a student-scholar and on the people you worked with.**

This project helped me realize how capable we are of actually creating something that will improve other people's lives. It made all the past and future sleepless nights of studying for engineering tests worth it. It took a year of preparation and 8 weeks to actually build the bridge. However, during those 8 weeks we were also able to help a community believe in themselves. There is a huge issue in Nicaragua due to political affiliations. Some people don't feel like the local municipalities care about them if they do not align with their political agenda, thus, they feel forgotten and unable to carry out any sort of improvement for their community on their own. However, by being involved in the construction of the footbridge, they realized that they have the power to organize their neighbors, to bring families together and that everyone, no matter the age or gender, can be part of a tangible improvement to the place they call home. I want to believe that all the effort the NDSEED team put on site motivated them, not only to work for something they consider important, but also to always try to do things with the highest possible quality and safety considerations. Finally, as Notre Dame students, the fast-paced life and the bubble that is campus sometimes consume us. In Nicaragua I experienced first-hand how much

there still is to be done in terms of international development and was reassured on the fact that people don't need our aid, they just need us to be tools to show them how to make the best use of their potential.

**Describe how this experience is connected to your plans as a student or future professional.**

The reason I chose civil engineering is due to the potential it has to improve people's lives through infrastructure. Being a part of this project has not only provided me with valuable experience in construction management, structural design and actual construction techniques, but also with a deeper understanding of what the field of international development focused on infrastructure entails. This experience has reassured my passion to work on projects related to structural issues in developing nations. Especially after the catastrophic earthquake that took place in my home country, Ecuador, 4 months ago, the need for better infrastructure is evident. During my time at Notre Dame, I would like to get more involved in other research projects from the Department of Civil Engineering related to the developing world, Engineering 2 Empower specifically. I would hope that my experience with NDSEED will help me contribute to the work they carry out in Haiti in relation to disaster relief and possibly start research in Ecuador that I could carry out throughout the school year and summer and continue even after I graduate. In addition, for my Catholic Social Tradition minor I need to carry out a senior capstone project that ties together engineering with the deeper human issues present in a certain situation. This experience in Nicaragua showed me how much there is to think about and will certainly serve to me as a guide when starting my capstone.

Although I learned a great amount of things in Nicaragua, this project made me realize how much more preparation I need to be of more help. It's still in my plans to try to go to graduate school for Structural Engineering or Urban Planning with a focus in international development.

**What advice would you give other students who are planning to pursue similar projects?**

NDSEED builds a bridge in Nicaragua every year, so other students will carry out this specific type of project in the future. We maintain very close relationships between current and past team members, so any particular advice can be transmitted. However, to future NDSEED students as well as anyone interested in engineering for international development, I would tell that my summer in Nicaragua was one of the hardest but most rewarding experiences in my life. It's not the kind of thing you can do without an open mind and heart. You might have a passion for infrastructure or service from the beginning, but the only way to maintain it is by interacting with the people around you. Share with your teammates, share with the community. It may sound cliché, but there is actually a lot more that you will learn from them than the other way around.

I acknowledge that this form has been filled out truthfully and to the best of my ability. I understand that this information will be shared with many different CUSE constituencies. As such, I have provided as much useful information as I was able. I understand that CUSE will not

