Experience-Based Learning: *Global Engineering Culture and Society*

Julio Urbina, Patrick Tunno, and Angela Rothrock

The Pennsylvania State University
Program Foundations

FULBRIGHT

UNIVERSIDAD NACIONAL DE INGENIERIA
LIMA 1876 PERU

NSF

GLOBAL ENGINEERING ENGAGEMENT

PennState College of Engineering
This partnership does not represent a northern neighbor coming to rescue a southern neighbor. We come to the table as equals to exchange ideas, learn from each other, and address joint challenges.

–Peruvian Dean
Administrative role
The outcome
Clark Scholars gift
Program Structure

- Pre-departure (STS 115)
- UNI student engagement
- Maymester timing
- Multidisciplinary team
- Wraparound projects
Assessment

Lima Reflection

Escogí la Huaca Pucllana para este ensayo reflexivo porque la Huaca tenía una parte grande en mi vida diaria en Lima. La ubicación de la casa en cual viví por las dos semanas en Lima estaba directamente al lado de la Huaca. Yo podía mirar por mi ventana de mi cuarto y ver la Huaca. Estaba la primera cosa que veía después de despertarme y la última cosa que veía antes de acostarme. Por eso, la visita de la Huaca Pucllana por la clase de español tenía un impacto grande para mí. Antes de la visita, creía que la Huaca fue construida por los Incas. Aprendí que no solo fue construido por los Incas, pero construido mil años antes de los Incas existían. Para mí, eso era muy difícil creer. Es increíble que esta huaca haya existido por tanto tiempo y todavía está en una condición relativamente buena. Aprendí que eso es porque las personas la construyeron en una manera para que la Huaca pudiera sobrevivir los siempos y otros eventos naturales. También, el hecho que Lima es en un desierto ayudó mucho. El guía de la visita dijo que la Huaca sería destruida si ya llovía en Lima porque el sedimento de que la Huaca es construido sería erosionado. Este hecho me...
The Cross-Cultural Engagement Program in Lima, Peru greatly impacted my life as a student, as an avid traveler, and as a young adult. My homestay provided a rare chance to hone my Spanish speaking skills through daily life. Learning in an environment with Peruvian students helped us collaborate while bridging cultural gaps. As someone who hopes to work globally, this was surely a step in the right direction. This early exposure to working in a setting with multiple cultures was invaluable to me. I also learned to work with people in other fields of study. I love that this program is not limiting to engineering students. I learned a lot about myself and others while working in groups of students from different academic backgrounds. Of course, I also loved taking in every excursion during my six weeks. From sandboarding in Huacachina to hiking up Machu Picchu in Cusco, I soaked up every moment - taking plenty of pictures along the way. Overall, I was sad that my time in South America had come to an end, but I am eternally grateful for the opportunities and experiences that this program has provided me.

Kim Sabol, 2019 participant
Motivation

Redefining the Role of Science/Engineering in our Modern World

- Growing divide between STEM and non-STEM
- Society has forgotten the impact of scientists/engineers on humanity
- The next generation of scientists/engineers want to change the world
- Creative problem solving is not just about technology solutions but also human-centric solutions
Program’s Conceptual Framework
Essential Elements

**Vision**
- Exposure to use of scientific methods in developing a problem statement revolving around identified global challenges
- Provide experience-based understanding of the value of multidisciplinary teams
- Practice investigating contemporary issues in a broader global context

**Objectives**
- Increase access to study abroad in Latin America
- Increase retention and graduation rates of minority students
- Develop leadership skills and intercultural competence
Student Activities
Student Activities
Student Activities
Questions
Reflection & Discussion

• What types of intercultural experiences and community engagement programs are available on your campus? Do they address SDGs?
• What resources could you leverage on your campus/ in your network to design or enhance a program that addresses SDGs?
• What barriers are you facing?