*A brief note on GEARE Global Design Projects from Francisco Montalvo, GEARE's assistant director for global projects:*

As travel restrictions continue, we have been forced to learn and adapt, and we have developed a series of alternative options for our GEARE students who are unable to travel abroad as they do every spring. One of these options has been the re-establishment of the GEARE Global Design Project component. In its origins, GEARE had at its core a strong industry involvement. With small cohorts, we provided a single, often sponsored project in which students worked alongside exchange students in project courses at Purdue during the spring. The accelerated growth of the program beyond Mechanical Engineering into all of engineering disciplines, made the application of this mode of the Global Design Project a challenge.

The pandemic has brought along a need for cooperation at new levels, and with the support of a few selected partners, we piloted the concept of remote design projects with Purdue students in the summer of 2020. With successful trials, we went ahead and invited other partners with hopes of reestablishing our global design projects under this novel model. For 2021, we are proud to offer six different options for our GEARE and partner university students in genuinely collaborative, global projects. We are able to provide interdisciplinary topics ranging from aeronautical design with industries in Mexico to water quality challenges in South America with the support of the WHO. For the Fall 2021 and beyond we are happy to bring on board important industry partners such as Siemens and Daimler in Germany as well as new cooperation from other regions of the world.

We interviewed Professor Ximena Yepez, a professor at Escuela Superior Politécnica del Litoral in Ecuador who has worked with Purdue students on a global design project.

**What project is it? What is the role Purdue students will play in that?**

This project is aimed at improving the local economy of a small, rural Ecuadorian community called Paipayales, which is located about 1 hour north from Guayaquil. The people in the community are smallholder farmers dedicated mostly to rice crop and harvest. Families in this community live with a reduced income of less than $3 per day. The course we taught this semester was about community service, and it included undergraduate students from Purdue and ESPOL (Escuela Superior Politécnica del Litoral) who worked together as a team to achieve two objectives: 1) identifying the main problems of the community; and, 2) proposing solutions that could improve the local economy by adopting novel food processing technologies.

**What is your experience working with Purdue students? What are the differences with other students from other universities?**

The experience of working with students from Purdue was familiar to me, as I was a TA during my graduate studies at Purdue. However, working with students from Purdue and ESPOL at the same time was a bit challenging because we can see some differences. For example in Ecuador, the students like to speak more extensively on a topic and sometimes it is difficult for them to be specific in their answers, maybe it is a cultural thing. Balancing the management of students from completely different cultures was the greatest challenge.

**How has the GEARE program prepared Purdue students?**

The course was very well organized by the GEARE staff. During the course we had all the support that we could hope for and beyond. This helped us to have a smooth flow of the material, even to the point where the students didn’t notice that it was the first time this course was being taught in this format.

**What challenges have you faced in setting up these design projects?**

The main challenge was to keep all the students in the same page, because we had different backgrounds and a language barrier. For specific topics we needed to provide reinforcements through lab sessions, which was a short time before class where the students worked in groups to discuss the contents and developed presentations or shared information about the community, within the scopes of each group project.

**What was the inspiration for the project idea?**

In developing countries, the contrast between a big city that has everything, and, just an hour away, a community lacking the most basic services and infrastructure is not an uncommon situation to find. Such communities suffer from poverty, lack of basic services, gender inequality and low level of education, among other issues. I was aware of projects developed by Purdue faculty aimed to solve problems from rural communities in Africa and other parts of the world, and how these projects were sometimes difficult to implement because of the absence of strong counterpart teams in the target countries to have things rolling. Therefore, based on the time spent at Purdue and the network I built as a graduate student, we came up with the idea of assembling a diverse group of professionals that are willing to work together with professors and students from Purdue to solve real problems with the sole objective of improving the lives of people, with the side advantage of providing a virtual experience of a Study Abroad program for both Purdue and ESPOL students.

**Where do you hope this project will go in the future?**

We started this project in May and it focused mainly in data recollection and preliminary analysis. The work that we completed during this first course is intended to be used as the starting point for working towards developing a proposal to improve post-harvest practices and processing of crops and fruits. Future steps will include the search for funding so we can turn these ideas into a reality in a near future.

**Is there anything else you would like to add?**

A very important matter during this course was the language: the official language of the lectures was English, with some Spanish here and there (so Spanglish then). However, the midterm and final presentations were delivered both in English and Spanish, so we could see not only the improvements in their projects throughout the course, but also their increasing abilities to communicate in a foreign language in a professional setting. For me as a professor, the experience was fantastic. The material and preparation of the course was mostly made for the students, so they could have the opportunity to share their culture with each other and to see that there are no limits for their education.