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Partnering Academia and Engineering Diplomacy: Answers to Global Challenges ^[1]



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The global refugee crisis is heading the news for the fifth straight year. The United Nations Refugee Agency (UNHCR) reports that nearly 69 million people have been forcibly displaced due to war, violence and persecution. Over the past few years, there have been countless international efforts to address the refugee crisis, both by state and non-state actors, ranging from humanitarian relief efforts to intergovernmental conferences and UN deliberations. But did the refugees really get the chance to represent themselves, voice their own concerns, and present their needs at any of these deliberations?

In Los Angeles, thousands of miles away from some of the most heated refugee spots in the world, a class offered at the University of Southern California (USC) Viterbi School of Engineering provides refugees with the platform to present some of their most pressing needs

in refugee camps. The class was designed as an educational opportunity bridging theory with application to find innovative solutions to positively impact refugee lives. This unique class partners students from different backgrounds and disciplines—USC students and refugees residing in countries across Europe. This partnership with the end-users of the products developed through the class ensures their engagement in finding practical solutions to big problems. The class also focuses on partnerships between multiple stakeholders, including residents of refugee camps, local governments hosting the refugee camps, international NGOs and the private sector. The partnerships forged between these different actors encourage hybrid collaborative exchanges and multidisciplinary solutions.

Academia and engineering diplomacy have great potential and should be a major part of diplomacy activities.

This year-long course aims to take an empathy-driven multidisciplinary approach to social innovation and product design. Although this course, "Innovation in Engineering Design for Global Challenges" (syllabi found [here](#)  and [here](#) ) is offered in the Sonny Astani Department of Civil and Environmental Engineering at USC, it includes students from 14 disciplines across seven USC schools: USC Viterbi School of Engineering, USC Marshall School of Business, USC Annenberg School of Communication and Journalism, USC Iovine and Young Academy, USC School of Cinematic Arts, USC Keck School of Medicine, and USC Dornsife College of Letters, Arts and Sciences. It is taught by Burcin Becerik-Gerber, Associate Professor and Stephen Schrank Early Career Chair, jointly with Associate Professor of Practice in Civil and Environmental Engineering and Architecture David Gerber, and Lecturer Brad Cracchiola, a product development engineer. The special needs of this course require Daniel Druhora to act as its coordinator, who handles communications and administrative tasks, coordinates with stakeholders and manages the logistical planning for travel. Thus, each instructor brings their own unique perspective and expertise to the table, making it a multidisciplinary approach at the instructional level as well. "It is multidisciplinary from a cultural standpoint, from a tactical standpoint, from a faculty standpoint, from an approach standpoint, and that, we believe, will lead to a greater chance of success," said Gerber.

The course began with a week-long site visit to two refugee camps in Lesbos, Greece—Moria and Kara Tepe. During this trip, students were exposed to some of the greatest challenges facing refugees and humanitarian workers inside the camps, which served as preliminary research to identify the needs to be addressed by their products. "We wanted [USC students] to know that the refugees are not powerless. They have a say in their own future," explained Druhora. The USC team also held meetings with the multiple stakeholders involved, from local governments in Lesbos, to the international organizations operating in the camps. "None of us came back the same people. This was a life-changing experience for all of us," said Becerik-Gerber. Being on the ground brought in a new humanitarian dimension to problem-solving that policymakers and scientists focused on numbers and statistics often forget.

Academia, Engineering, and Diplomacy

Diplomacy is the art of negotiation, which typically refers to international exchanges between representatives of international actors, normally encompassing a full range of topical issues. When it comes to foreign policy, diplomats can be thought of as the engineers of the policies,


where engineering is often defined as “design under constraint.”

The importance of engineering lies in its use of systems-oriented, proactive and innovative initiatives which require engagement, multidisciplinary collaborations and negotiations instead of short-sighted policies. Given the challenges facing foreign policymakers and diplomats in light of today’s global issues, such as the refugee and migration crisis, academia and engineering diplomacy could and should have a higher profile. Their importance lies in reaching beyond the traditional state actors to include international non-state actors, including local governments and communities, international non-governmental organizations, the private sector and academia, and bringing them all together in confidence- and capacity-building activities.

These actors are currently working to address global challenges including the refugee crisis, but academic institutions are often not given the chance to be part of this global conversation when, in fact, they are in a good position to do so. Academic institutions are a meeting medium for international minds to assess and address global issues and work toward a shared understanding of them. Academia’s main objective is to educate and train and push minds to think creatively, thus capitalizing on students’ existing diverse skillsets, and in this case, to create meaningful and powerful global solutions for the greater good. Academic institutions are also in a position to work freely with many stakeholders without the political constraints facing other actors.

This USC course aims to utilize students’ zeal and fresh minds in real-life innovations, preparing them for the real world, where global partnerships are an inevitable reality when looking for solutions. “This multidisciplinary collaboration is the reality of the world today,” Cracchiola said. This is the reality that diplomats, as well as researchers, need to embrace. What diplomacy can learn from engineering, explains Druhora, is “a systems-thinking, a designs-thinking approach to solving problems, and [...] I think that engineering and diplomacy can work together more and learn from each other.”

Academia and engineering diplomacy have great potential and should be a major part of diplomacy activities. Academics are trained to do adequate and optimal systematic research; engineers are trained to find optimal solutions and overcome constraints; and diplomats are required to find the optimal solutions serving their entities’ foreign policy interests. This optimization process is key for appreciating the limitations faced individually and taking advantage of their potential when working together.

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