DUKEENGAGE IN CHILE
Developing workforce skills and conserving the forest environment

Dates: May 21 - July 16, 2020
(Dates subject to change up until the point of departure.)

Service Themes
• Environment & Conservation
• Economic & Workforce Development and Social Enterprise

Program Focus
Participating in efforts to develop and strengthen workforce skills related to the transition of this temperate forest from logging to ecotourism. Supporting conservation activities including limnology of glacial lakes, re-forestation of native trees, assisting local botanical nurseries, and monitoring endangered species.

Program Leader
Jose Miguel Sandoval, Guest Lecturer, Sanford School of Public Policy. Jose Miguel Sandoval has published work on child rights as well as studied trends in Arab-American public opinion. Through leading DukeEngage-Chile, he hopes to promote awareness about conservation and sustainability in the area.

Program Overview
During their stay in Chile, students will work with the Huilo Huilo Foundation, based in Santiago and the town of Neltume, which focuses on promotion of human development and conservation of native plants and animal species endemic to the Huilo Huilo area. This program is aimed at improving economic activities of women artisans and entrepreneurs. It also addresses economic development of indigenous population, the poorest residents in the area. Students will participate in projects in two main areas: first, providing local artisans and ecotourism entrepreneurs with modern marketing tools, and second, adding to the community partner’s knowledge of the resources existing in the reserve by, for example, assessing water quality, supporting reforestation efforts, and monitoring an endangered species (Pudu Puda).

Goals for Students
Students will be exposed to projects in the social and natural sciences. They will learn to interact in meaningful dialogue with the indigenous communities and will develop skills in limnology and flora and fauna identification.

Partnership Opportunities
Students will actively participate in ongoing activities of the Huilo Huilo Foundation. At least four main themes will be addressed, with potential activities including the following:

• Workforce development: The household survey taken in Year 1 of the program, aimed at understanding the community’s transition from logging to ecotourism, is now being used to identify segments of the labor force in need of development of labor skills. Students will support local artisans and ecotourism entrepreneurs by, for example, designing websites and promotional materials, preparing videos to educate tourists about the safety of activities such as zip lines, white water rafting, and trekking; or designing apps to disseminate information to tourists.

• Measuring water characteristics of the Reserve lakes: Students may travel to five glacial lakes to measure water characteristics and the presence of subaquatic life, and to collect information on the fauna in the adjacent
environment. Currently, information about these lakes is mostly anecdotal and privy to only a small group of community members. For the first time, a knowledge base about the lakes will be made available to the community at large. Students will report on characteristics of the lakes through comparisons of their water quality, location, depth and support of animal life. In 2019, a second data collection of twelve bodies of water will be made. This is aimed at achieving accurate measurements. Supporting the re-forestation effort: Students will travel to areas identified by the Huilo Huilo Forestry Reserve for replanting of native trees and documenting the presence of invasive trees and bushes using photography. Students will engage with staff scientists at the Reserve to evaluate findings after each field visit. This service activity is essential to establishing a link between the community and the Forestry Reserve.

- Preventing the extinction of the smallest deer on Earth: Working with the director of conservation in charge of identifying and locating Pudu Puda using trap cameras is an important component of the conservation project. The information obtained in this project will contribute to a better understanding of the presence of Pudu Puda in the Huilo Huilo Reserve. Only anecdotal information is available about this elusive small deer. Using a scientific approach at measuring its presence and location, students will contribute to building a database of sightings taken during the spring and summer of 2017. The community will gain knowledge about this animal through dissemination efforts in schools and other community gatherings.
- Building a greenhouse serving as a center for seeds development to be used by fresh vegetable growers. This is a net effect of a proposal made in 2018 to encourage the production of fresh vegetables in the region.
- Develop and implement workshops at local schools on the subjects of environment and conservation. Special attention will be given to subjects related to water and forest pollution, as well as the conservation effort to enhance the population of huemules within the biological reserve. Emphasis will be put on enhancing knowledge and understanding of issues related to endangered species, particularly Rhinoderma Darwinii.

**Program Requirements**

Language Requirements: Intermediate-level Spanish is required.

Course Requirements: Coursework in conservation and biology is preferred but not required. Any coursework in web or app design would be beneficial.

Other Skills: Students must be motivated and enjoy work that regularly involves walking and other outdoor physical activities in a cool, wet environment. Some background in biology and/or fieldwork is preferred but not necessary. Working knowledge of photography of natural settings may be helpful. Also, knowledge of fishing from lake shores will be useful. Skills in web development are welcome. For the 2020 project, skills with microscopes and slide preparation are also welcome.

Personal Qualities: Students must be motivated to work in close collaboration with others, including personnel of the Huilo Huilo Foundation, children, local entrepreneurs, and indigenous organizations. Students must be willing to learn new skills and gain new experiences, while demonstrating patience and flexibility.

**Program Details**

Description of Community: The Huilo Huilo Foundation Complex is located in Neltume, a small town in the Panguipulli Province located between two lakes, Panguipulli to the West and Pirihueico to the East. Neltume has a population of around 2,400 people. Five miles to the Southeast is Puerto Fuy (population 600), a port community in Lake Pirihueico. Neltume and Puerto Fuy are small, relatively remote communities with limited infrastructure. The closest airport is in the city of Valdivia, about 120 miles away. In addition to these two small towns, there is a territory to the East of Lake Neltume inhabited by the Mapuche People (population 600). These are indigenous communities, inhabiting the region for over 3,000 years. The project will work with three independent communities located about four miles west of Neltume. High temperatures will vary from 28 to 58 Fahrenheit. Rain occurs frequently. Snow is possible.

Housing and Meals: Students will stay in lodge-style housing that is part of the Huilo Huilo Foundation Complex. Housing will consist of multi-person rooms with beds, nightstands, and closets. Each lodge has a kitchen and a living room. Meals
are provided by local staff five days a week. Students will cook for themselves at least one day a week. All heating in the lodges is provided by wood stoves.

Local Safety, Security, and Cultural Norms: If you have special needs related to health, cultural, or religious practices, please contact the DukeEngage office, dukeengage@duke.edu, to discuss whether or not your needs can be reasonably accommodated in this program.

For information related to how your religion, race, sexual/gender identity, ability or other aspects of your identity might impact your travels, we recommend starting with the Diversity, Identity and Global Travel section of the DukeEngage website.

We encourage students who have questions or concerns about health or safety in international programs to check Duke’s International SOS (ISOS) portal for relevant information.

Reflection and Enrichment: Weekly meetings will include a discussion with a local tourism provider about his business plan, conversations with “artesanas” on the prospects of their work, and dialogue with community leaders on promoting entrepreneurial activities. A visit to the town of Valdivia, a university town of about 150,000, is planned at some point during the experience. A visit to the university and a discussion with a local physicist (a glaciologist doing research in Volcano Mocho-Choshuenco) will be arranged.

Note that much of the work in this program will be collaborative and in groups, and students will be living in close quarters, so autonomy and private space may be limited.

Curricular Connections
While all students are welcome to apply, this program may be of particular interest to students studying public policy, environmental policy, or economic development. Courses in innovation and entrepreneurship, web and app design, conservation, education, and limnology are relevant to this program, as well as courses across disciplines that address poverty and economic development in rural communities. Students taking the following courses would benefit from and can contribute greatly to this project: ENVIRON102, ENVIRON153, ENVIRON201, PUBPOL256, PUBPOL267, PUBPOL271S, MMS380, ISS 240, and ISS 241L.