I. Objectives

The objectives of this spring 2014 semester sabbatical leave were to (1) teach masters level civil engineering courses at the Universidad de Piura (UdeP), Peru, and (2) conduct research and perform activities as requested by faculty in the UdeP civil engineering department.

This sabbatical leave was conducted under a 2013-2014 Fulbright Scholarship sponsored by the Institute of International Education within the United States Department of State, Bureau of Educational and Cultural Affairs. My family accompanied me for the duration of the sabbatical leave and was also recognized under the scholarship.

II. Project Outcomes

A. Masters Classes

A primary purpose of this sabbatical project was to teach two masters level civil engineering courses for the Universidad de Piura (UdeP), Peru, in their professional masters program (Programa Master en Ingeniería Civil). UdeP offers professional masters degrees in civil engineering at both the main Piura campus and the branch Lima campus. Successful completion of the master’s degree requires either 30 credit-hours of courses or 24 credit-hours of courses with a thesis report. As a part of this sabbatical, the same 3-credit course was taught at both campuses. The course was titled “Technology for Highway Construction” or “Tecnología para la Construcción de Carreteras, TCC”. The following table summarizes the course at the two campus locations.
Masters Course: Technology for Highway Construction

<table>
<thead>
<tr>
<th>Campus Location</th>
<th>Dates</th>
<th>Students Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piura</td>
<td>May and June 2014</td>
<td>35</td>
</tr>
<tr>
<td>Lima</td>
<td>June 2014</td>
<td>39</td>
</tr>
</tbody>
</table>

The course was taught in a traditional classroom setting. It was held for a total duration of 40 hours from five weekends at eight hours per weekend on Friday evenings and Saturday mornings. Students in the masters program are typically practicing professional engineers so class time was built around their weekly work schedule. The course was taught in Spanish and a translator assisted as necessary. All course materials and presentation slides were in Spanish. Because of an overlap between weekend courses in early June, an additional UdeP faculty member also taught modules of the course. A syllabus was developed that specified class homeworks and a final report. All material was taught from a textbook that I co-authored entitled, Construction Planning, Equipment and Methods, 8th Edition, The McGraw-Hill Companies, 2011. Construction equipment videos developed in English at the UW-Platteville campus were subtitled in Spanish at the UdeP campus and shared with the students to enhance learning.

B. Undergraduate Class Lectures

The UdeP civil engineering department periodically requested the delivery of lectures in the undergraduate course, “Planificación de la Construcción (Construction Planning)”. Four hours of lectures were delivered for topics including work breakdown structure, overhead cost estimating, and the earned value method.

C. Seminar Lectures on Highway Materials and Design

UdeP faculty and administration requested campus-wide presentations on advanced highway engineering concepts in the U.S. that are underway and could be adopted in Peru. Attendees included both current students and alumni practicing engineers. Presentation topics included the new Mechanistic-Empirical Pavement Design Guide, as well as the Superpave materials design methodology. In addition, a Superpave implementation plan was written to assist Peru in adopting this technology.
D. Seminar Presentation about Fulbright – “EducationUSA”

The Fulbright office in Peru and the International Program at UdeP requested a presentation about the Fulbright experience to encourage students to apply for “EducationUSA” grants. The presentation included an overview of the application timeline, opportunities for students abroad, and experience goals.

E. Masters Program Outreach

The UdeP civil engineering department requested technical presentations to professors and masters students in Ecuador and Colombia to strengthen the relationship between masters programs. Technical presentations and meetings were held at the Universidad Técnica Particular de Loja (UTPL) in Loja Ecuador, and at the Los Andes Universidad in Bogotá, Colombia.

F. Consulting

UdeP faculty requested input on concrete mixture designs using a range of materials native to Peru, and cement produced locally in Peru. An analysis of causes provided for premature distress on concrete pavement was provided on large copper mine facilities high in the Peruvian Andes Mountains. The investigation included an analysis of drawings and test data, as well as a short summary of causes of early premature distress.

G. Memorandum of Intent Agreement between Universidad de Piura and UW-Platteville

Meetings were held at UdeP to develop an exchange program between UdeP and UW-Platteville. A Skype™ session was held between the universities in April 2014. A Memorandum of Intent (MoI) agreement was drafted and shared between the universities to begin the process of creating a collaborative relationship between the universities. The goal is to create a Memorandum of Understanding agreement that fosters a relationship for students and faculty to engage in learning and cultural exchange.