



**Phillips with her ICD students in Bolivia**

### **Linda Phillips Contributions to Global Engineering Recognized**

**Tampa, Fla. (September 8, 2010)** – Linda Phillips, Lecturer and Patel Associate at the University of South Florida (USF) in the Department of Civil and Environmental Engineering, was awarded the American Society of Engineering Education (ASEE) International Division’s “Global Engineering and Engineering Technology Educator Award” at the 2010 ASEE Conference. This award acknowledges engineering and engineering technology educators for their exceptional contribution to global engineering and engineering technology education.

Linda is best known as the founder of International Senior/Capstone Design (ICD) and as a lead author for *Field Guide in Environmental Engineering for Development Workers: Water, Sanitation, Indoor Air* (American Society of Civil Engineers (ASCE) Press, Reston, VA, 550 pages, 2009).

The vision behind International Senior/Capstone Design is for students to generate engineering work that benefits a developing country and their people. This project class inspires students with the vision of lifelong learning, giving, and community service, to serve as a strong foundation for their professional careers and lives. Linda began this program 10 years ago, well before Engineers without Borders (EWB) and Engineers for a Sustainable World (ESW) were created, and long before most faculty members were bringing the Millennium Development Goals into the classroom or incorporating human/caring perspective into their learning objectives. To demonstrate the impact of Linda’s teaching and vision of having the design projects benefit the global community, to date, 21 of the 59 design projects have been implemented through the construction phase by the international municipality and neighborhood groups that she partners with. In a recent assessment the student designs that were implemented had served 150 beneficiaries who reside in the Dominican Republic and 211,000 who live in various neighborhoods of Santa Cruz, Bolivia.

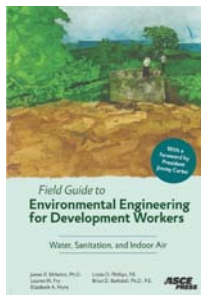
International Senior/Capstone Design is structured to emulate the business of a design/build firm in industry. This is because the typical student in this course will likely find themselves in the workplace within 6-12 months after the class experience. The program is divided into 2 parts; a summer visit to the

developing country followed by the fall design class on the USF campus in Tampa. During their stay in-country, students visit project sites, collect data and communicate with local authorities, experts and stakeholders of the municipal projects. Additionally, students work on a construction project alongside locals to enhance the cultural experience and introduce them to the local construction methods and techniques. Students form a “design team” which is directed by the team-elected project manager. Teams of 3-4 students are expected to complete the final project design; each team working on a different design project, just as in industry. Specific tasks and assignments are made within the team by the students themselves, sharing the work equally in their own time, which is monitored by individual timesheets to track project progress. Project managers update the CEO (i.e., instructor) via required weekly meetings. International Senior/Capstone Design gives students a “real world” engineering project experience from inception to feasibility studies, preliminary and final designs, and then producing construction drawings for the developing world “client’s” use should the client choose to implement the students’ designs.

The International Senior/Capstone Design program first partnered with a non-governmental organization, municipalities (i.e., sub-mayor offices), and neighborhood groups in Santa Cruz, Bolivia. ICD now partners with a university in Cochabamba Bolivia, Universidad del Valle or UNIVALLE ([www.univalle.edu](http://www.univalle.edu)), local municipalities and officials, and nongovernmental organizations in Cochabamba. UNIVALLE has developed formal agreements with the municipalities to provide “real world” engineering infrastructure projects for the program. UNIVALLE also provides professors to mentor and co-instruct the students, translators and coordinates logistics of housing, meals and transportation. In addition, UNIVALLE engineering students join the USF student project teams to work together to assess the problems and develop solutions. This arrangement is intended to enhance the cultural experience for students and faculty of both institutions. Whereas the International Senior/Capstone Design classes conducted in Santa Cruz involved US students, mentors, practitioners and instructors and were engaged with Bolivian engineers, this new partnership allows International Senior/Capstone Design to team U.S. and Bolivian students, faculty, practitioners and municipal officials, each with vested interests.

Cindy Schafer (currently an Environmental Engineering graduate student at USF) says that taking ICD as an undergraduate helped her to discover her career goals and has guided her toward them. After graduation Cindy worked for a nongovernmental organization in Mexico on sustainable building construction before beginning her graduate studies. She is currently performing her MS research in Cochabamba, investigating how materials that comprise household water storage tanks influences water quality. Heather Wright Wendel (currently an Environmental Engineering graduate student at USF) says that prior to ICD, she was not confident in how her knowledge as an engineer could improve the lives of those most in need – whether in industrialized nations or the developing world. For her doctoral studies, Heather has continued to use her ICD skills to help those in need. She currently conducts research in Tampa and Bolivia and her dissertation research is focused on the adverse impacts of urbanization on society and urban water cycles.

For the “Global Engineering and Engineering Technology Educator Award” ASEE also recognized that Linda had co-authored engineering education articles published in journals such as *Environmental Engineering Science* and *Civil and Environmental Engineering Systems*. Some of her other writings have been presented with the *International and Environmental Engineering Divisions* at the ASEE national meetings and also at the American Society of Civil Engineers’ (ASCE) *World Environmental & Water Resources Congress*. She is also the author of two book chapters directly related to international engineering education that will appear in 2011. The first, “If You Don’t Go, You Don’t Know,” will appear in the book *What Is Global Engineering Education For? The Making of International and Global Engineering Educators*. The second, “Developing World Partnerships that Facilitate International Research and Service Learning Programs for Young Scholars,” will appear in *Monograph on Strategic Issues in University Internationalization*.



Aside from International Capstone Design, perhaps Linda’s largest contribution to international engineering education is that she is one of the lead authors and the book’s illustrator for *Field Guide in Environmental Engineering for Development Workers: Water, Sanitation, Indoor Air* (American Society of Civil Engineers (ASCE) Press, Reston, VA, 550 pages, 2009). Though just released one year ago, this book is in its second printing and is used by engineering practitioners who join professional groups like Water for People and Rotary

and engineering faculty who teach appropriate technology courses which are being launched on campuses all over the country. Peace Corps has also ordered close to 100 copies of book for use in technical training of their water/sanitation engineers over the next year. This summer, Linda’s artistic contributions to this book were also recognized as the book won an honor in the 2010 Book Design & Effectiveness Awards Competition, sponsored by Washington Book Publishers. The book took second place in the category of Technical Text, competing with books from other large nonprofit publishers, such as Johns Hopkins University Press and the World Bank.

*The University of South Florida is one of the nation's top 63 public research universities and one of only 25 public research universities nationwide with very high research activity that is designated as community engaged by the Carnegie Foundation for the Advancement of Teaching. USF was awarded \$380.4 million in research contracts and grants in FY 2008/2009. The university offers 232 degree programs at the undergraduate, graduate, specialist and doctoral levels, including the doctor of medicine. The USF System has a \$1.8 billion annual budget, an annual economic impact of \$3.2 billion, and serves more than 47,000 students on institutions/campuses in Tampa, St. Petersburg, Sarasota-Manatee and Lakeland. USF is a member of the Big East Athletic Conference.*

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**Jim Mihelcic**  
**Professor, Civil and Environmental Engineering**