

A YEAR IN THE SUDAN

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Faculty sabbaticals from undergraduate engineering colleges like Rose-Hulman Institute of Technology are generally spent at another American university doing teaching or research. Another destination is in American industry. On all occasions, faculty members seek to extend their knowledge in a specialty area and bring something back to the classroom or laboratory to benefit their students. So how does a year working for a Sudanese humanitarian organization achieve this same goal?

First let me discuss the destination of my sabbatical. Sudan is in northeast Africa and is like two countries in one. The northern part of the country resembles a Middle Eastern nation, and the southern portion resembles sub-Saharan Africa. Living in the capital of Khartoum (10+ million population) allowed me to sample both, and I spent some time in Egypt, learned some Arabic, and obtained a better understanding of Islam.

As the world flattens (according to the terminology of Thomas Friedman), our graduates will be working with engineers from other nations, and soon may be competing with them for jobs. Our graduates are already beginning to work for American companies that have a strong international presence, and many will spend a portion of their career in foreign countries. In preparation for this, the Civil Engineering Department at Rose-Hulman has sponsored international senior design projects for the last three years (Trinidad, Ghana, and Sudan). In addition, some students are spending a summer or year abroad. The professional development of our faculty continues to take on an international flavor with Fulbright fellowships and overseas trips for conferences and collaboration. International sabbaticals are merely an extension of the activities that are already taking place.

Next, let me discuss the work that I performed in Sudan. Humanitarian work is not alien to engineers; witness the rapid growth of “Engineers without Borders” and similar organizations. I was fortunate to be able to work on a bio-sand, water filter program. These water filters are made from concrete and are for home or public building use. They were designed by a Canadian organization. Many universities have tested the treatment effectiveness. They have been adopted as an acceptable world standard in the use of “appropriate technology” and “sustainable design.” These two concepts are increasingly common in engineering circles and certainly something to share with my students.

Finally, I spent a portion of my time updating and drafting the 4th Edition of the textbook entitled “Fundamentals of Hydraulic Engineering Systems.” I thoroughly enjoy working on textbooks that will help students understand difficult concepts. I hope that this new edition will be completed by the end of the year and be published early next year.

Apart from the humanitarian and textbook work, I had a number of personal and spiritual reasons for my sabbatical. I hope to give a number of presentations on my sabbatical, including presentations at Rose-Hulman and at ASCE and ASEE venues.