

APPROPRIATE TECHNOLOGIES FOR COMMUNITIES IN THE DEVELOPING WORLD

Pete Schwartz

We are building a program to improve the lives of impoverished communities and stimulate economic growth with projects consistent with the principles of co-authored development. This model recognizes the poor as those most qualified to help themselves because they understand their situation best and because they are the most invested in the effort to improve their lives. We can empower these efforts with technological assistance and small loans. These technologies should prioritize sustainability and self-reliance (as should those in developed countries). For this reason, we propose *co-developing* technologies with the developing communities that need and request them, while providing ongoing insight in how to disseminate technologies and business models

This partnership benefits those providing assistance as well as those receiving it. Through this partnership, students and innovators learn about challenges not present in developed countries. They are forced to design with constraints outside their scope of experience, which fosters creativity, ingenuity, and breakthroughs not possible otherwise. Additionally, the nature and magnitude of these challenges requires a breadth of collaboration -- across cultures, all academic disciplines and industries. Working across these boundaries provides an invaluable experience -- professionally, and personally.

California Polytechnic State University in San Luis Obispo (*Cal Poly*) is ideally suited to co-develop appropriate technologies with communities in Latin America. In addition to offering a strong, comprehensive general education program, Cal Poly is dedicated to both technology *and* agriculture, and thus has vast resources in disciplines including engineering, business, agriculture, livestock, post harvest food processing, architecture, and the social sciences. The university has the motto "learn by doing", and fosters an interdisciplinary atmosphere of interdepartmental collaboration.

My work is dedicated to renewable energy and a class series, "Appropriate Technology for Impoverished Communities" where students work in small groups to address challenges in partnering communities. Besides specialists on campus, we collaborate with efforts at other universities including MIT and University of California at Davis as well as with nonprofits including Engineers Without Borders. Some of the projects of the larger group are: establishing a sustainable community on campus, designing a sustainable technical college in Tanzania, the development of inexpensive solar powered lighting in Zambia, and exploring irrigation technologies for Malawi. There exist many more projects, and available resources at our disposal, and we look forward to building a productive collaboration with communities interested in co-development of appropriate technologies.

Dr. Peter V. Schwartz, currently an Associate Professor of Physics, has been at California Polytechnic State University since 2000. He is developing appropriate technology solutions for Working Villages International (WVI). He teaches "Energy, Policy, and the Environment", "Appropriate Technology for Impoverished Communities", all foundation physics classes, and selected upper division experimental classes. He is an energy policy consultant for local government and nonprofits, and conducts research in concentrated solar technologies, automobile energy cycles, and financial analysis of energy technology substitutions.