Fall 2005 EE and CPE Senior Project and Masters Thesis Students

In response to Cal Poly being a signatory of the Talloires Declaration, and in collaboration with the Electric Power Institute, and the new Center for Sustainability in Engineering of the College of Engineering, consider joining the:

Sustainable Power for Electrical Resources (SuPER) Project

Brief Summary of Project Development:
The proposed activity is the development of a low-cost, sustainable source of electrical power with a 20 year life cycle that can be financially owned by a family unit. This technology, called SuPER for sustainable power for electrical resources, will be provided for people in underdeveloped countries to provide them access to electrical power through free market mechanisms, as opposed to governmental aid programs. The technology is based upon existing technology, but extrapolates capabilities into the future using a Moore's Law model. The technology is based upon solar photovoltaic source, battery storage, and a standard DC output to be specified. For more details, review the White Paper for Sustainable Power for Electrical Resources – SuPER at http://www.ee.calpoly.edu/~jharris/research/research.html under the super project link. The technologies involved will be system engineering, embedded system design, controls, power electronics, digital design, and power protection. The system development plans are to use an FPGA, soft-core processor architecture for flexible hardware implementation of the acquisition, storage, control, and distribution of DC power.

Support for the Project:
Students working on the project will be expected to meet once a week for a one hour seminar with the faculty associated with the project in addition to working on their senior project or thesis. A proposal has been submitted to NSF for student support, but its status will not be known until the Winter quarter. If the proposal is successful, then students working on the project will be provided financial support. Support also is being sought from foundations. The EE and CPE faculty are currently working with faculty in the Orfalea College of Business, and it is planned that business students will be using the project for their senior project in BUS 454.

If interested, then please contact one of the following EE and CPE faculty for details:

Dr. James G. Harris
Dr. Ahmad Nafisi
Dr. Ali Shaban
Dr. Taufik