

Engineers without Borders Engineers making a difference in the world



Susan Bolton
(sbolton@u.washington.edu)
Faculty mentor
UW student chapter of EWB

<http://students.washington.edu/ewbuw>

<http://www.ewb-usa.org/>



Engineers Without Borders National - History

- Started April 2000
- Dr. Bernard Amadei and 8 students at CU Boulder
- First project San Pablo, Belize
– water delivery system
- Completed May 2001



Poverty and Health

- Poverty not just lack of money
- Lack of access to knowledge and resources with which to address their basic human needs
 - Sanitation
 - Water supply
 - Food production and processing
 - Housing
 - Energy
 - Transportation
 - Communication
 - Income generation
 - Employment creation

Sachs 2005

Engineers without Borders Mission

- Work with disadvantaged communities worldwide
 - To improve their quality of life
 - Implement environmentally / economically sustainable and socially equitable, engineering solutions to problems such as
 - water storage, distribution, drinkability, sanitation, irrigation
 - dormitories for schools
 - electricity for light powered by solar energy (PV)



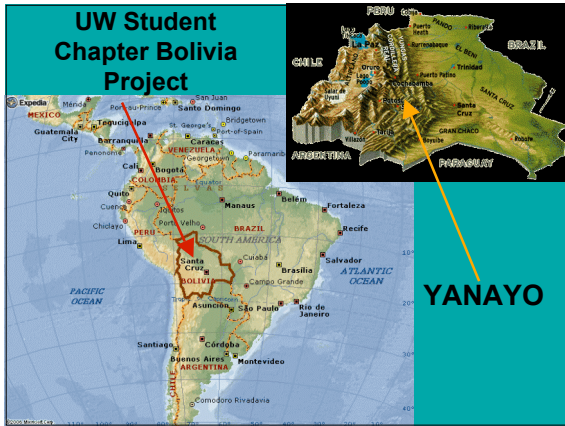
EWB motto

- Changing the world one community at a time
- Several local chapters
 - Puget Sound Professional Chapter
 - Seattle University Student Chapter
 - University of Washington Student Chapter



Engineers Without Borders University of Washington

- Started in May, 2005
- Partnered with Puget Sound Professional Chapter on irrigation project in Susudel, Ecuador
- Annual Dessert & Wine Fundraiser
- Took on project in Yanayo, Bolivia
- ~ 25 active members, ~140 on listserv
- Weekly meetings (tonight, 6pm EE303)
- Offer class on Engineering in International Development ENGR 380 (Fall and Winter)



Yanayo Project

- Small community in the department of Potosi (central Bolivia)
- Mountainous terrain, semi-arid climate
- About 25 families

Short term: Roofs, stoves, water, health

- ❖ Replace thatch with tin

Benefits:

- Decrease habitat for insect that carries Chagas disease
- Facilitate new stove design with chimney (corrugated metal not flammable)



Stove Project

- Replaced current stoves with Lorena-type stove that contains chimney
 - Began as ME 495 senior design project
- Taught local community members how to build the stoves



Designed and installed an irrigation system



Summer 2008 work in Bolivia

- Work on stabilizing roads and bridge design
- Develop workshops on health
- Develop workshops on agriculture and livestock
- Investigate feasibility of introducing composting toilets
- Do roof and stove project in adjacent villages

Local Project San Juan National Park



- Trail work
- Composting toilets
- Potential building design and/or retrofit to higher environmental standards

Possible new projects

- Haiti
 - School improvements in Tifond in Port-de-Paix, Haiti
 - Classrooms consist of up to 80 students that sit on crowded dilapidated wooden benches
 - Sun as the only light source.
 - Leaky roof propped up by tree branches
 - Renovated classrooms and electricity will create a desirable learning environment for students.
 - Meeting today at 4:30 in the CSE atrium

Possible new project

Suriname



The people of Suriname are being exposed to toxic levels of mercury and arsenic in rivers and drinking water

Used in gold mining to extract the gold



Community identified needs

- Identify and build safe water source
- Facility for self-monitoring mercury levels
- Health tests to assess effects of mercury
- Risk assessment of fish



What can you do?

- Take a class
 - Sustainable project design and implementation for EWB projects (Fall and Winter quarter) ENGR 380
 - Quarter-long class in Costa Rica on Sustainable Development – Spring Quarter
 - Become active in the UW student chapter of EWB
 - <http://students.washington.edu/ewbuw/index.php>
 - Next meeting Thursday 5 pm. EE 303
- Get active in your area of interest to improve the world

