



IEEE Global Humanitarian Technology Conference (GHTC)

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Seattle, Washington



Technology for the Benefit of Humanity

Sponsored by IEEE Seattle Section and IEEE Region 6

"What Works and What Doesn't" Panel

This session will be a discussion of experiences the panelists have had in the application of technology for humanitarian purposes. Each panelist will make a short initial presentation in the first half, followed by open dialogue among the panel members and with attendees for the remainder of the session. A major goal of the panel is to have a broad discussion on leveraging technology in non-traditional environments for humanitarian goals, including lesson learned and best practices.

On the "What Works" side, the focus will be on projects that have made actual impact on the ground, especially with an impact beyond a local village or single clinic, are on-going, have become self-sustaining, and have made a significant difference in the lives of a significant number of people.

On the "What Doesn't" side, the focus is on projects that did not work out as expected, and perhaps most important, what was learned from them.

Co-Organizers: Ed Perkins and Lew Terman

Panelists:

- **John Coonrod**, The Hunger Project
A short presentation on how The Hunger Project developed its village development methodology, introducing six examples of what we learned from what doesn't work on the human side of development.
- **Mark Henderson**, Arizona State University
Humanitarian Engineering has to balance both concepts: Human and Engineering. We have found that diversity in the project teams is a critical key to maintaining a focus on both who and what are important and to produce the most effective impact.
- **Cathy Leslie**, Engineers Without Borders
EWB-USA reaches its 10 year anniversary in the spring of 2012. During these 10 years, the organization has seen much change and the need for more. Engineering skills are not enough to do good development work. This brief presentation will look at some of the skills that are needed for success in EWB-USA communities.
- **Tony Marjoram**, Specialist in engineering and technology for development, former head of engineering at UNESCO
Engineering and technology are vital in human, social and economic development, and yet have failed to deliver much to the millions who live in poverty. This presentation will explore the factors behind this, and what we can do about it.
- **Michel Maupoux**, Green Empowerment
A short talk about observations and lessons from the fields of small-scale renewable energy and water projects.
- **Jay Pearlman**, IEEE Committee on Earth Observation
The IEEE engages in humanitarian efforts through its volunteers and their technical skill base. With members in 160 countries, projects engage both in-country participation and international participants. There are many successes and challenges in completing projects and, in particular, assuring sustainability. This presentation overviews several IEEE projects and discusses the current status and the lessons learned. This includes work in Asia, Africa and elsewhere.

Panelist Bios:

John Coonrod is executive vice president of The Hunger Project (THP, www.thp.org), a global, strategic organization headquartered in New York City, where he has worked since 1985 and where he has gained extensive experience working in Africa, Asia and Latin America. He is a leading spokesperson for the organization and has been interviewed on BBC, CNN and NBC television. John is an expert on bottom-up, gender-focused development and decentralized local governance who has lectured at the United Nations, Harvard, Columbia, MIT and NYU. He was trained as an experimental physicist at Stanford (BSc 1973) and U.C. Berkeley (MSc 1975, PhD 1978), where he served on teams that built the High Energy Astronomical Observatory (HEAO) satellite and the first whole body CAT scanner. He was a Research Associate at the Prince Plasma Physics Laboratory (1978-1984), responsible for magnetic diagnostics on the Tokamak Fusion Test Reactor.

Mark Henderson is Professor of Engineering and Associate Dean of the Barrett Honors College at Arizona State University. He holds a Ph.D. degree in Mechanical Engineering from Purdue. He is a co-founder and Executive Director of GlobalResolve (<http://globalresolve.asu.edu>), an ASU program to provide sustainable economic development to base of the pyramid communities primarily in Ghana, Mexico and Arizona. GlobalResolve has worked in several villages on clean water, off-grid electricity generation and smokeless cooking systems among other projects, with the express goal of helping communities use these technology solutions to create business ventures. His international design interest began by starting the Global Engineering Design Team from 1998-2008 and the Nomadic Design Academy with 6 other universities from 2002-2004. He is also a co-founder of InnovationSpace (<http://innovationspace.asu.edu>), a multi-disciplinary product development experience and led the development of a new (2011) Technological Entrepreneurship and Management program on ASU's Polytechnic campus. Although his early research was in geometric modeling, his recent publications center more on global design education, design thinking and curriculum development, especially around social entrepreneurship.

Cathy Leslie has served as the Executive Director of EWB-USA since 2004. She oversees the operations and finances of the organization and is responsible for the consistent achievement of the mission. Cathy develops and administers the diverse programs of EWB-USA with both dedication and vision. With a passionate and dedicated Board of Directors, staff team, and membership base, Cathy is leading EWB-USA to the next level of organizational achievement.

Cathy began her work in developing countries as a Peace Corps Volunteer in rural Nepal. During her station, she developed and implemented solutions that addressed drinking water and sanitation issues facing the community. In addition to her work in the international sustainable development field, Cathy has over 20 years' experience overseeing both domestic and international corporate engineering projects. As the Executive Director of EWB-USA, Cathy bridges her skills and experience as a Professional Engineer with her commitment to the creation of sustainable and participatory solutions to rural community development projects.

Dr. Tony Marjoram joined UNESCO in 1993 and was responsible for the engineering program at UNESCO until 2011, when he retired to have more time to focus on engineering, technology, innovation and development. He has a BSc in Mechanical Engineering, an MSc in Science and Technology Policy and PhD on technology for development. He is a Chartered Professional Engineer, Fellow of the Institution of Engineers Australia, and has over 25 years experience in engineering, science and technology policy, planning and management in the development context. Dr Marjoram has worked at the Universities of Melbourne, the South Pacific and Manchester, and edited the UNESCO Engineering Report published in 2010 – the first international report on engineering.

Michel Maupoux is Technical Director at Green Empowerment. Michel was born and raised in France. After his French engineering degree, he spent six months backpacking through South America, and two years teaching math and Spanish in West Africa. He then worked several years in a small French pump manufacturing company, where he designed an innovative solar photovoltaic pumping system. He moved to the USA in 1979, spending two years as a research assistant in the Solar Energy Applications Lab of Colorado State University at Fort Collins, CO, and wrote his MS-ME thesis there on a solar grain drying application.

He spent 1982 through 2004 at Hewlett-Packard, in engineering, marketing, service & support, and management, in the US Pacific Northwest, France, and Switzerland, working with people of many nationalities, cultures, and backgrounds. With Green Empowerment, Michel has provided the design and installation of solar water pumping systems in Nicaragua, and the Philippines, and community solar electrification in Peru. He has taught workshops on solar photovoltaic systems and water pumping systems for remote communities in Peru, Ecuador, and the USA in English and in Spanish.

Jay Pearlman, until his recent retirement, was Chief Engineer of Network Centric Operations Capabilities (C&EM) at Boeing and was a Boeing Technical Fellow. Dr. Pearlman has a Ph.D. from the University of Washington and a B.S. from the California Institute of Technology. His background includes sensors, remote sensing and information systems. Dr. Pearlman has more than 80 publications and 25 US and international patents.

Jay is a Fellow of the IEEE. He was Chair (2007-09) of the IEEE-wide Committee on Earth Observation. In this role, he coordinated IEEE activities in GEOSS, addressing information systems, standards and capacity building in Earth observation applications, societal impacts and outreach. He is a co-lead on the smart water-harvesting project in Melva, Rajasthan, India, working with in-country volunteers. In addition, he defined and is working with a team in Ghana on the Weija dam project. In the area of communications, Dr Pearlman initiated collaboration between IEEE and South Africa on improvements in rural communications for health and education applications. This builds upon existing projects for southern Africa and draws on the IEEE technical expertise.

Organizers: Ed Perkins, Lew Terman

Ed Perkins is IEEE Region 6 Director 2011-12

Lew Terman was the 2008 President of IEEE and past chair of the IEEE Humanitarian Technology AdHoc Committee

Panelist	Organization	Role	Contact
Tony Marjoram	UNESCO	Emeritus	t_marjoram@yahoo.com
Cathy Leslie	Engineers Without Borders	Executive Director	cathy.leslie@ewb-usa.org
Jay Pearlman	IEEE Committee on Earth Observation	Past Chair	jay.pearlman@ieee.org
Michel Maupoux	Green Empowerment	Technical Director	michelm@greenempowerment.org
John Coonrod	The Hunger Project	Executive VP	jc@thp.org
Mark Henderson	Arizona State University	Professor of Engineering	mark.henderson@asu.edu