Where there is No Engineer - Designing for Community Resilience

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Funder: Irish Aid

Development Education Grant

Irish Aid provides funding through an Annual Development Education Grant for organisations engaged in promoting understanding of and engagement with global development and justice issues.

Program Coordinators:

Development Technology in the Community (DTC) Research Group, DIT

The Development Technology Research Group is part of the Water Innovation Research Centre (WIRC) within the Environmental Sustainability & Health Institute (ESHI) in DIT.

Design Competition for Students and Professionals

“Where there is no Engineer” is a design initiative coordinated by the Development Technology in the Community (DTC) Research Group in Dublin Institute of Technology. The program is funded by Irish Aid and delivered in partnership with Concern Worldwide, Engineers Ireland and Engineers without Borders Ireland.

Context

This competition will focus on northern Kenya, working with the pastoralists who roam across three countries from northern Uganda.

Themes

Create change and find opportunities to improve communities. There are six global development program themes. Each theme will explore the relationship between people, technology and the environment.

- Climate Resilient Infrastructure
- Self Supply Water and Sanitation
- Community Participatory Health
- On and Off (Micro) Grid Energy Systems
- Food Security
- Applying Big Data in the Community

Award

Outstanding undergraduate and professional teams will be invited to participate in the National Finals.

The overall project winner will get the opportunity to travel to the program country to work with our development partners.

Further information can be sourced at: www.dit.ie/dtc
Global Development Themes

There are six program themes. Each theme explores the relationship between people, technology and the environment.

1. **Climate Resilient Infrastructure**
   - The post climate change era is upon us. However designers are still struggling to understand the role of climate change and the ways in which we can respond to it. Projects within this theme will take a different approach. By making these infrastructures more climate proof, this will add an additional level of complexity, but will also add a new level of resilience for communities within the project area.

2. **Self Supply Water and Sanitation**
   - A safe and sustainable water supply, basic sanitation and good hygiene are fundamental for a healthy and productive community. Chronic diarrheal diseases and malnutrition induce a negative spiral into poverty. This theme supports rural livelihoods by promoting food security, health and productive activities and demands innovative approaches to the provision of rural water, sanitation and hygiene.

3. **Community Participatory Health**
   - Community participatory health involves the participation of the community in the identification and management of their own health issues. Projects within this theme will focus on different levels ranging from medical diagnosis and treatment of new diseases, innovations in optometry, to community education techniques and software for preventative and management of health issues.

4. **On and Off (Micro) Grid Energy Systems**
   - The lack of access to energy undermines health and limits opportunities for education and development. The problem of energy access for the poor has become even more acute because of the increased vulnerability brought about by climate change and the global financial crisis. Projects within this theme, will explore solutions to energy supply using both on and off / micro grid systems.

5. **Food Security**
   - Climate change will impact on food availability, food accessibility, food utilization and food systems stability. Regions which are already vulnerable to food insecurity face immediate risk of increased crop failure, new patterns of pests and diseases, lack of appropriate seeds and loss of livestock. Projects within this theme will seek to strengthen the resilience of communities to cope.

6. **Applying Big Data in the Community**
   - Advancements in big data analysis may offer cost-effective opportunities to improve decision-making in areas such as infrastructure, health care, water and sanitation, livelihoods, food security, natural disaster and resource management. This theme will explore the relationship between big data and the community through real life data analysis.

Program Rules

Q: **Who can participate?**
   - A: The design challenge is open to both undergraduates and professionals across a range of scientific, engineering and business / media disciplines.

Q: **How can I participate?**
   - A: Entry to the design challenge can be made by emailing the program coordinators directly or through the project website.

Q: **Which program theme can I choose?**
   - A: Project teams may address a single theme or provide an integrated solution for two or more themes.

Q: **What are the submission requirements?**
   - A: Each organisation can nominate up to four team submissions for entry to the national finals.

Q: **What are the judging rules?**
   - A: All submissions will be reviewed by a multidisciplinary panel.

Q: **When are the National Finals?**
   - A: The National Finals will be held in June 2015.

Q: **What is the final award?**
   - A: The winning team / individual will be funded to travel to the country program to experience first - hand the development challenges.