



**Transforming *Perspectives* for a Sustainable Global Future**

*Imagine. Design. Create.*

**Building a better world through *Peace Engineering***



# Peace Engineering A Definition



Peace Engineering is the *intentional application of systemic-level thinking of science and engineering principles to directly promote and support conditions for peace.* *Peace Engineering works directly towards a world where prosperity, sustainability, social equity, entrepreneurship, transparency, community voice and engagement, ethics and a culture of quality thrive.*

We want to transform the mindset of all existing disciplines (not only engineering) and create new disciplines to address our global challenges.



**Health, Well-being  
and  
ECHO – Peace Engineering  
in  
Post-COVID-19 Africa**



# Notices



- **This session is being recorded**
- **Please type your name, email and affiliation in the chat**
- **Please keep your microphone muted**
- **Q&A is after the presentations**

**We are monitoring the chat so you can also ask questions there**  
**Please state your name and affiliation when asking questions**



# Agenda



## **Part A (30 minutes)**

What is Peace Engineering? *(5 minutes)*

- **Bernard Amadei** – University Colorado – Boulder, EWB founder
- **William Oakes** – Purdue University, EPICS Director
- **Ramiro Jordan** – President of IFEEES, University of New Mexico

The ECHO model for collaboration in and for Africa *(15 minutes)*

- **Bruce B. Struminger** – Senior Associate Director, ECHO Institute
- Clark Wigley – Global COVID-19 Response Program Manager, ECHO Institute

Water, energy, telecommunications and humanitarian finance *(10 minutes)*

- **Mike Paddock** – United Nations Development Program, EWB Chief Engineer
- **Rodney Herrington** – Aqua Research CEO – USA
- **Richard Harris** – Idea Capital Founder – Canada
- **Jason Lee** – Smartcone Founder and CEO – Canada

## **Part B (30 minutes)**

Identify Next Steps and Action Items

Questions & Answers, Survey



# Purpose



- **Enabling / Empowering People, Communities and Institutions**
- **Cultural Respect and Preservation**
- **Symmetry of Information and Knowledge – Level Playing Field**
- **All Teach – All Learn**



**NEW MEXICO**  
IT AIN'T NEW & IT AIN'T MEXICO



# The ECHO Model for Collaboration in and for Africa

**Bruce B. Struminger**

**Senior Associate Director, ECHO Institute**





# What is Peace Engineering ?

**Bernard Amadei**

**University of Colorado – Boulder**

**Engineers Without Borders (EWB) – Founder**







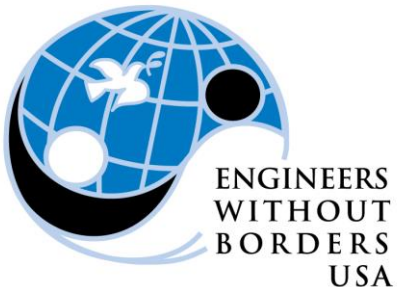
# Engagement Within the Curriculum

## IEPICS<sup>®</sup>

### William Oakes

Purdue University

EPICS - Director





# Engagement within the Curriculum IEPTCS®



- **Build capacity – using existing structures**
- **Adding engagement experiences into the curriculum**
- **EPICS Started at Purdue University in 1995**
  - **Global network > 50 universities**
- **Students engaged in real projects**
  - **Personal impact**
  - **Develop disciplinary and professional skills**



U.S. NAE  
Gordon Prize

Signature  
Program





# Water

**Mike Paddock**

**United Nations Development Program, EWB Chief Engineer**

**Rodney Herrington**

**Aqua Research, USA – CEO**





**AQUA**  
RESEARCH

The World's Waterborne Disease Solution

# ECHO WATER PRESENTATION

Rodney Herrington  
5601 Midway Park Place NE  
Albuquerque, NM 87109  
(505) 362-0575  
rodney@aquaccess.com  
www.aquaresearch.com

# Aqua Research Products



**AQUA**  
RESEARCH



## H2gO Global

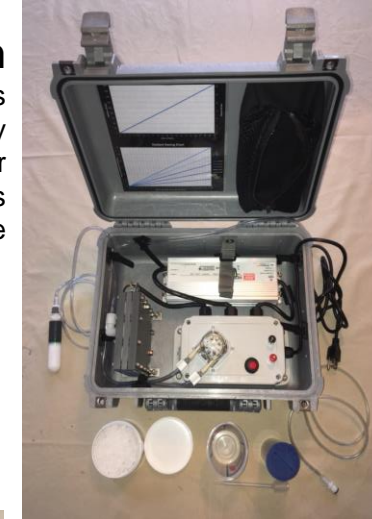
- Compact, rechargeable unit that treats up to 5 gallons per cycle, provides 10 gallons per day for 10 years at 50 cents/year
- Perfect for rural families, backpackers & travelers



## H2gO Micro

- Compact, rechargeable unit that treats up to 5 gallons per cycle, 50 gallons per Charge
- Low Cost for Developing World

- ## Stream
- Briefcase size unit that treats up to 70,000 gallons per day
  - AC or DC (solar) power
  - Designed for villages, clinics or emergency response



## SafeWater Canteen

- 20 liter container with ultra-filter – removes all bugs and dirt



## Spring

- Batch generation system. 400,000 gallons per day treated. Power loss tolerant. Auto calculate salt/water makeup. Multi-lingual.

- ## K Series
- Commercial Scale, Siemens PLC Controls, Up to 25 lbs per day chlorine





# Humanitarian Funding

**Richard Harris**

**Idea Capital, Canada – Founder**



IDEA CAPITAL



**SMARTCONE**  
LEADING THE EDGE





IDEA CAPITAL

# Humanitarian Funding



**SMARTCONE**  
LEADING THE EDGE



- 1) Humanitarian, environmental and social impacting projects only.
- 2) Minimum \$150M up to billions.
- 3) Federal/State Government Support - NON-RECOURSE.
- 4) Full NON-DEBT funding start to finish for the length of the project.
- 5) 60% gifted back to the country/developer/P3 at the end of the project.
- 6) 40% retained by the financing group - option to purchase the remaining 40% at cost (no interest) spread out over time.
- 7) Timing - 6-8 weeks for first drawn down after all documentation are completed.





# Energy & Telecommunications

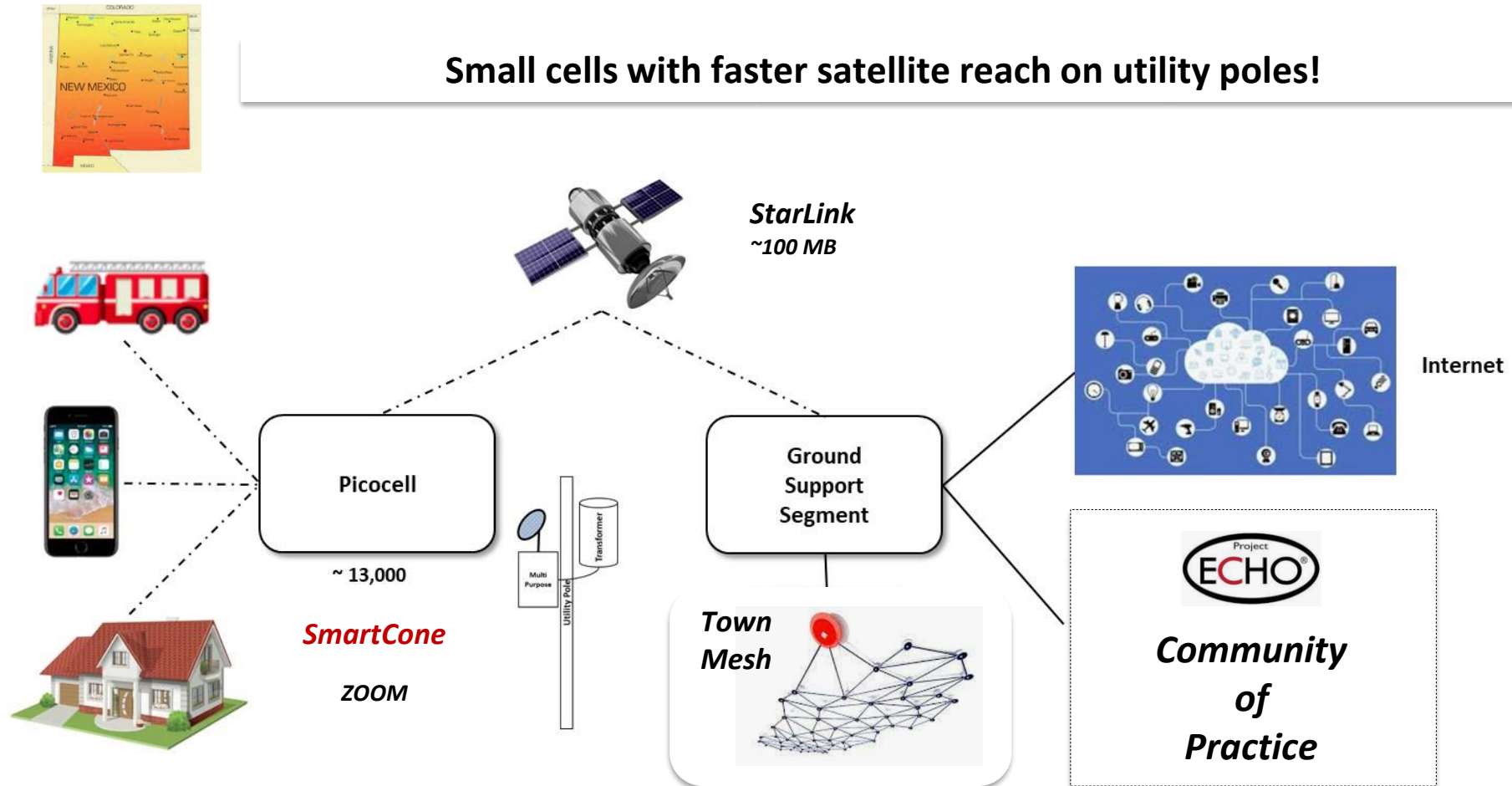
## Jason Lee

**Smartcone, Canada – Founder and CEO**



IDEA CAPITAL

# The New Mexico Ubiquitous Broadband approach can be deployed globally.



The goal is to roll out service across the entire state  
*within a single year from start of construction.*



# Initial Areas of Focus



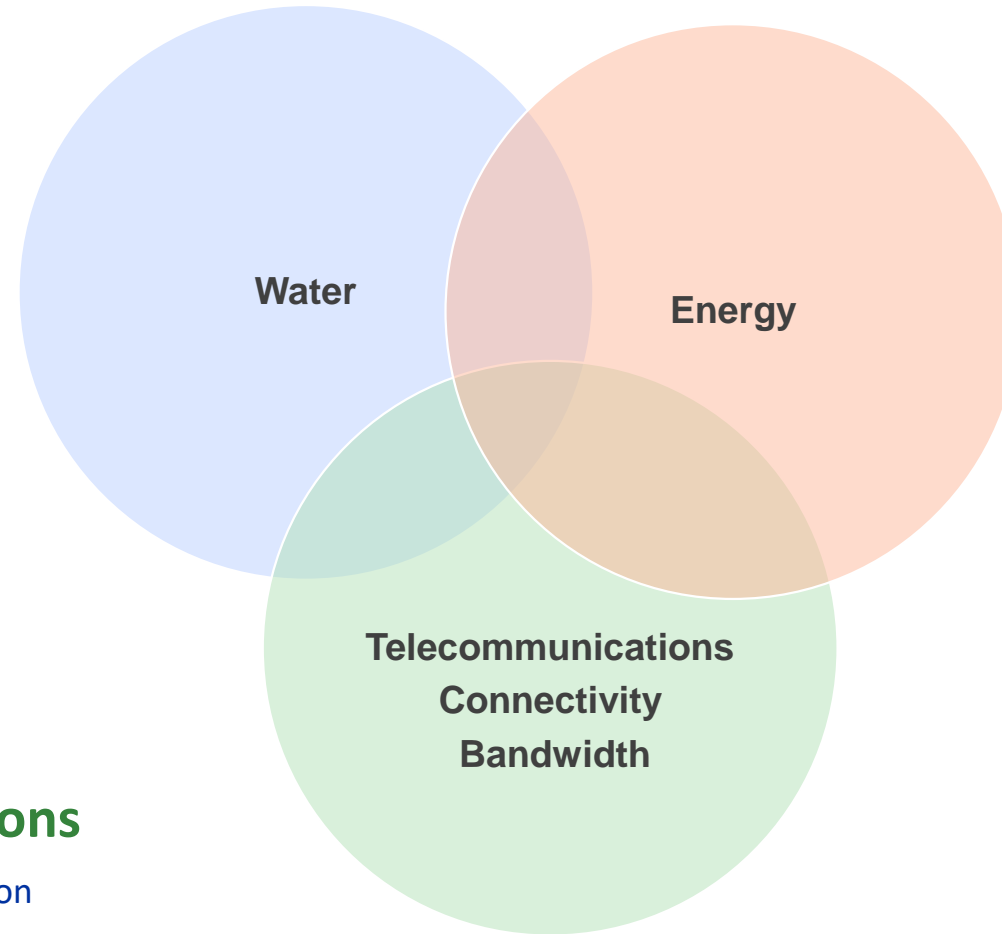
## Resources

### Talent

- ECHO Peace Engineering Development Team
- Global Network of Engineering SMEs in focus areas
- Global Network of Engineering students and faculty advisors who want to work on real projects
- IFEES/GEDC Global Network
- Customer/Client Resources

### Vetted Best Practice Solutions

- Water – pumping, filtration, disinfection
- Energy – Power suitcase
- Others . . .



***Community of Practice – All teach, all learn***  
***Empowering Communities***



# How to Get Involved

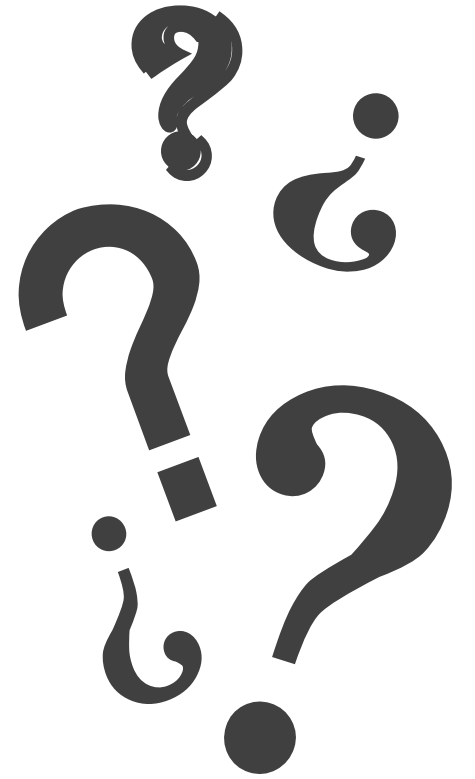
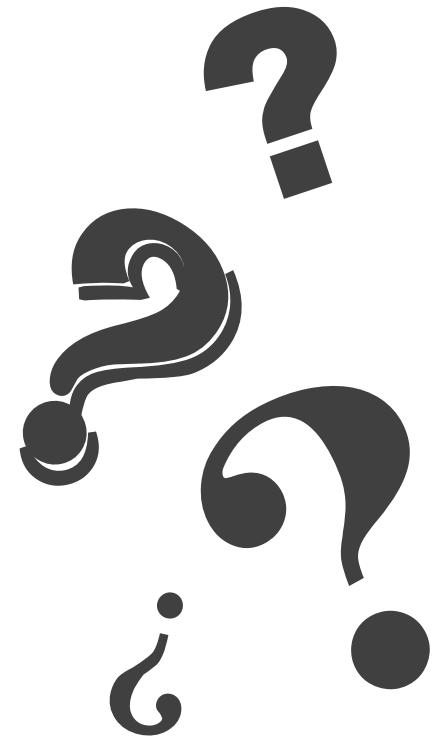


**Peace Engineering ECHO** [\*rjordan@unm.edu\*](mailto:rjordan@unm.edu)

**Project ECHO** [\*http://www.ifees.net/echo-peace-engineering/\*](http://www.ifees.net/echo-peace-engineering/)

**Project ECHO COVID-19 Response** [\*https://echo.unm.edu/covid-19\*](https://echo.unm.edu/covid-19)

# Thank YOU !!!!



Peace Engineering

