



From Creative Inquiry to Sustainable Impact

Skillsets

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

WORLD
ECONOMIC
FORUM



Mindsets



Skillset



Mindset



Problem Solving



Quantitative
Approach



Evidence-Based
Approach



Data-Driven
Approach



Systems
Approach

Portfolios

JOURNAL OF MEDICAL ENGINEERING & TECHNOLOGY, 2016
http://dx.doi.org/10.1080/17513758.2016.1213927



ORIGINAL RESEARCH ARTICLE

Value propositions of mHealth projects

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ABSTRACT

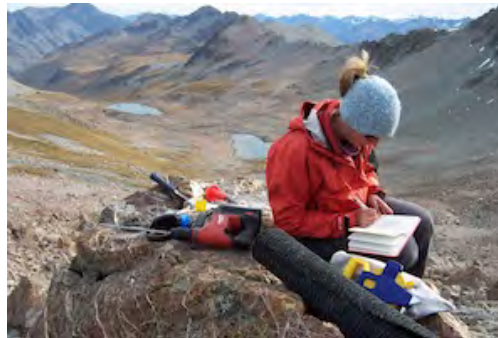
While mHealth holds great potential for addressing global health disparities, a majority of the initiatives never proceed beyond the pilot stage. One fundamental concern is that mHealth projects are seldom designed from the customer's perspective to address their specific problems and/or create appreciable value. A customer-centric view, where direct tangible benefits of interventions are identified and communicated effectively, can drive customer engagement and advance projects toward self-sustaining business models. This article reviews the business models of 234 mHealth projects to identify nine distinct value propositions that solve specific problems for customers. Each of these value propositions is discussed with real-world examples, analyses of their design approaches and business strategies, and common enablers as well as hurdles to surviving past the pilot stage. Furthermore, a deeper analysis of 42 mHealth ventures that have achieved self-sustainability through project revenue provides a host of practical and poignant insights into the design of systems that can fulfil mHealth's promise to address health-care challenges in the long term.

ARTICLE HISTORY

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KEYWORDS

mHealth; value proposition; healthcare; developing countries; meta-analysis







**Real, Meaningful,
Authentic Projects**

Potential Solution: Education



| 1 | | laptop | → | person |
one laptop per child

Potential Solution: Clean Water



Is it Affordable?



Is it Socially Acceptable?



Will Customers Use It?



Does It Address A Real Need?



Does it Meet Every Need?



Is it Pretty?

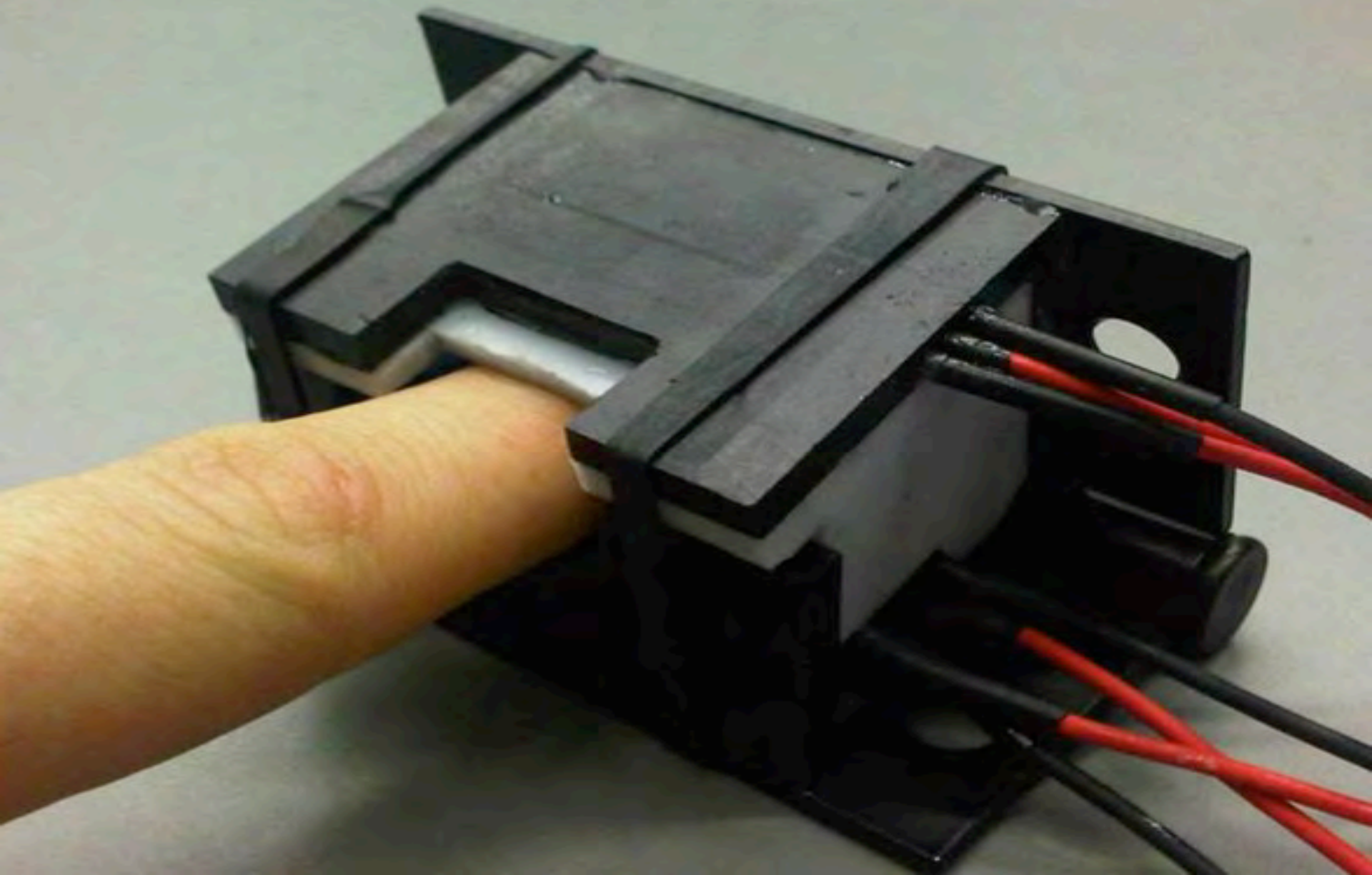


Can you Compete?

"Whatever you do there are bound to be skeptics, but I can tell you my method is foolproof," adding that, "Mine is not an argument, mine is a proof. It's a declaration. I can cure AIDS and I will."



Who will Manufacture it?



Will it Hurt the Environment?



Will it Reach the People?



Can YOU Scale It?



Sustainable & Scalable Solution



Technologically
Appropriate

Culturally
Acceptable

Environmentally
Benign

Economically
Sustainable



HESE Coursework



Fall Sem.

Social Eship

Spring Sem.

**Design for
Developing
Communities**

**Projects in
Humanitarian
Engineering**

Maymester.

**HESE
Fieldwork**

Fall Sem.

**HESE
Reflection and
Research
Dissemination**

Certificate in HESE | Minor in Social Eship

Affordable Greenhouses



***Grow better produce,
all year round***

Mashavu Social Franchisees



Eunice

Ann

Salome

Margaret

Lillian

Ann

UTI / Diabetes Screening



Design With Communities Commercialize for Markets



Research + Publications



139 Pubs; **15** In Review; **14** In Prep



PennState

PubHub

Strong Manuscripts. Compelling Publications. Confident Presentations.

Home

Publication
Process

Preparing
Manuscripts

Stronger
Writing

Conference
Central

Find an
Opportunity

Meet the
Team

Publication Process



Diverse Publication
Forums



The Journey
of a Manuscript



The Peer-Review
Process



Selecting a
Scholarly Journal



Avoiding
Plagiarism



Collaborative
Writing Strategies



Authorship
Issues



Responding to
Reviewers



Messy Journal
Issues



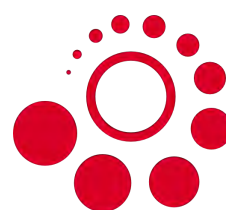
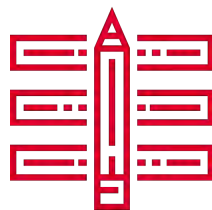
Keeping Your
Sanity

Don't see what you need?

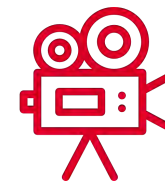
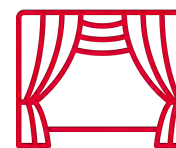
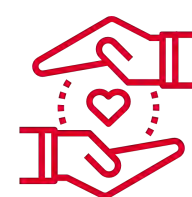
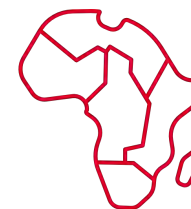
Creative Inquiry



Integrative Iterative Value Creation

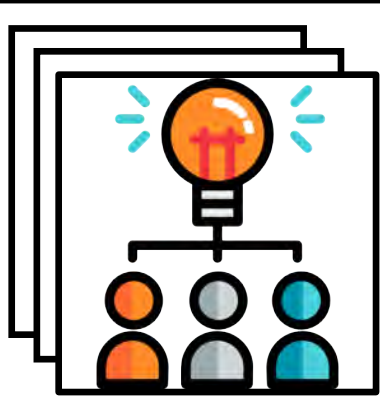


From Inquiry To IMPACT

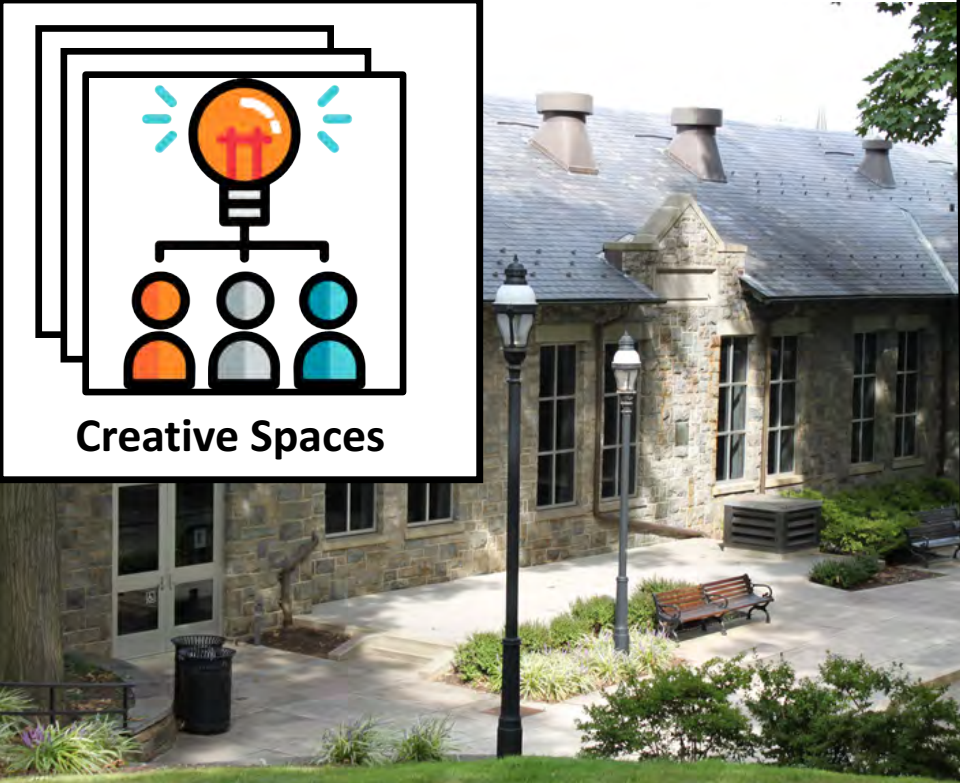








Creative Spaces



[illegible]

A large, messy pile of drywall debris, including broken sheets and fragments, is shown outdoors under a cloudy sky. A white rectangular sign with the word "DRYWALL" in bold black letters is placed in the foreground, partially obscuring the pile. The sign is supported by a wooden post. The ground is dirt and covered with some debris.

DRYWALL



WEEKLY WORLD

NEWS

June 15, 1993

60p

**Space creature survived
UFO crash in Arkansas!**

HILLARY CLINTON ADOPTS ALIEN BABY



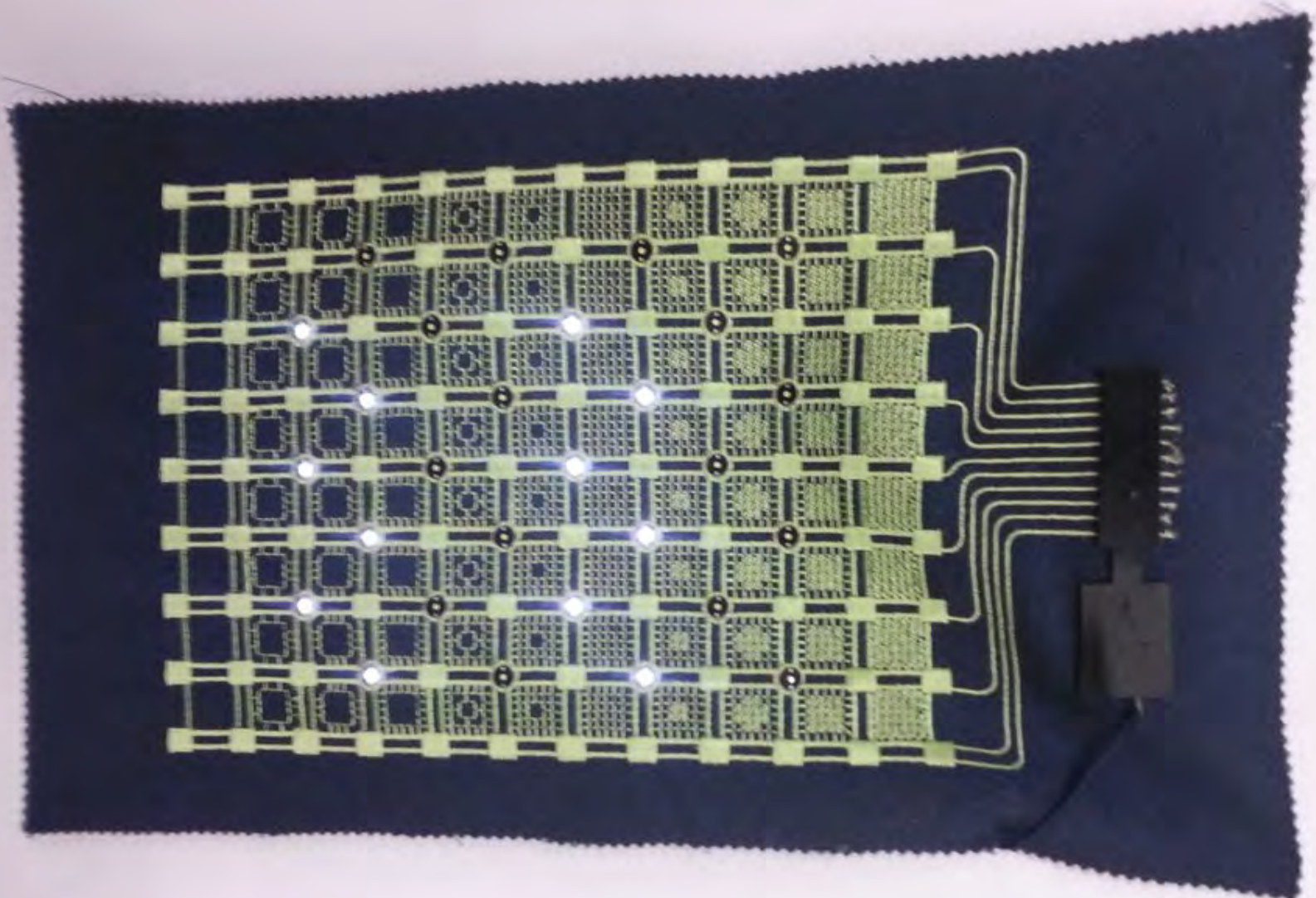
**OFFICIAL
PHOTO!**



**Secret Service building special
nursery in the White House!**



MATRIX UPHOLSTERY NIGHT BLUE







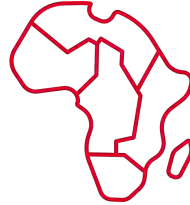
Impact Pathways and Ecosystems



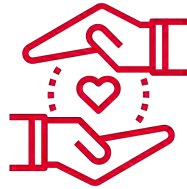
Resources
Networks
Programs
Champions
Mentors
Events
?????



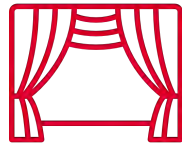
Entrepreneurship



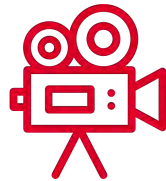
Sustainable Development



Community Engagement



Arts Engagement



Public Humanities



K-12 and Higher Ed.



Research → Pubs

-1

**Interdisciplinary
24/7 Non-Stop Action
Radical Ownership**

0

**First DO
(then Learn)**

1

**Opportunities
(Not Problems)**

2

**Outcomes
(Not Activities)**

3

GetStuffDoners
(Not Heroes)

4

**Ecosystems
(Not Products)**

5

**Professionals
(Not Volunteers)**

6

**Convergence
(Not Silos)**

7

Scalable Solutions **(Not One-Offs)**

8

**Embrace Markets
(Not Communities)**

9

Rigor + Evidence
(Not (Just) Passion)

11

**Focus on Execution
(Not Ideation)**

12

**Build Portfolios
(Not GPAs)**

13

**Launch Careers
(Not ABET Outcomes)**

14

**Create Impacts
(Not Experiences)**

15

**Grade & Celebrate
Accomplishments
(Not Experiences)**



What's Next?


©2015

Art by Jabez Issa



“What I really enjoy doing, doesn’t pay well.
And what pays well, I just don’t enjoy.”

Impact-Focused Careers



Do you want to harness the power of science, technology, and innovation to change the world?

Do you want to channel your passion and education to pursue a life-long career improving the human condition?

Regardless of where you are along your career path, what should be your next step(s)? Sign up for Peace Corps? Pursue graduate school? Take on a corporate job? Join a nonprofit? Launch your own social enterprise? Should you focus on energy, health, or food security? Should you stay in New York or move to Nairobi? The number of choices is daunting!



Khanjan Mehta is the Founding Director of the Humanitarian Engineering and Social Entrepreneurship (HESE) Program and Assistant Professor of Engineering Design at Penn State. Mehta has led technology-based social ventures related to food security and global health in Kenya, Tanzania, India, Sierra Leone, Mozambique and other countries.

Cover design by Peter Lusch

Solving Problems that Matter (and Getting Paid for It)...

stitches together a mosaic of perspectives, experiences, and actionable insights to illuminate the smorgasbord of career pathways in social innovation and global sustainable development.

54 expert briefs penned by leaders from USAID, MIT, Peace Corps, Engineers Without Borders, FHI 360, and other organizations offer practical insights into a myriad of topics such as:

- How do different kinds of organizations work?
- How do you find your first impact-focused job?
- What are the pros and cons of PhD, MBA, MPH, and MPA degrees?
- How do salaries and benefits work when placed in a developing country?

100 STEM innovators from the World Bank, UNICEF, Gates Foundation, Google, and dozens of social ventures, government agencies, nonprofits, academia, and corporations share their career profiles with you. Turn to any page to read an enlightening and inspiring inside story of a social innovator's role and responsibilities, career trajectory, and lessons learned along the way.

Read *Solving Problems That Matter (and Getting Paid for It)* and let 165 of today's most inspiring game-changers help you find your passion, make informed career decisions, and propel you into the exciting world of social innovation and global sustainable development.

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Solving Problems that Matter
AND Getting Paid for It

STEM Careers in
Social Innovation and Global
Sustainable Development

Khanjan
Mehta

Solving Problems that Matter

FEATURING
54
EXPERT
BRIEFS
&
100
INNOVATOR
PROFILES

AND Getting Paid for It

*STEM Careers in Social Innovation
and Global Sustainable Development*

EDITED BY

Khanjan Mehta

Solving Problems that Matter

Part 1

STEM for Social Innovation: The Time Is NOW!

Part 2

Organizations in the Social Innovation and Sustainable Development Arena

Part 3

Innovator Profiles

Part 4

Professional Preparation

Part 5

Professional Competencies

Part 6

Finding Your Niche

Part 7

Personal Considerations

54 Expert Briefs

ARE WE THERE YET?

Cathy Leslie

Cathy Leslie is the executive director of Engineers Without Borders USA, an organization that works with communities that lack adequate infrastructure for basic human needs. EWB-USA equips and connects volunteers to solve these global issues while creating an educational environment to develop skills-based volunteers. The issues of global infrastructure and engineering education find their solution in EWB-USA, which connects the two to build a better world.

I started my career in the Peace Corps in Nepal. In the thirty-plus years between then and now, I have to ask myself, “Are we there yet?” Working in developing communities today seems like it was back then. There were:

- Communities in need
- Organizations wanting to assist
- Volunteers ready to deploy
- Aid money being spent

100 Innovator Profiles



Photo by Jasmine Johnston

MULTILATERAL



Rick Johnston, 47

World Health Organization

Technical Officer, Joint Monitoring Programme for Water Supply and Sanitation | ~\$140,000

PhD, Environmental Engineering, University of North Carolina at Chapel Hill (2008)

MSc, Environmental Engineering, Johns Hopkins University (1996)

BA, French Literature and History, Grinnell College (1989)

Job Description

The World Health Organization (WHO), a United Nations agency, works around the world. WHO employs 7,000 people to help countries prevent communicable and noncommunicable diseases.



Have an open mind, and listen to people. In my field like any other, you cannot support development if you do not understand the situation people are in and the reason they make the choices they do.

Career Trajectory

Although Rick's specialty now is drinking-water, his career starts with an undergraduate degree in French and history. After graduating, he went to Asia for 1 year to study French and Japanese. He then worked for a French company in Asia for 2 years.

#1

It Takes a Planet

#2

**We Often Ask
the Wrong Questions...**

**What organization
do I want to work for?**

~~What organization
do I want to work for?~~

**What problems do I
really want to solve?**

**What is the best platform
to solve them?**

#3

**...Quality of Work and
Strength of Relationships.**

Portfolio





Empathy



Communication



**Multiple
Languages**



Global Quotient



**Contextual
Understanding**



Resilience



Teamwork Skills



**Entrepreneurial
Mindset**



**Ethical
Decision-Making**



Work Experience

Network



#4

**Solving Problems that Matter
Can Be Lucrative!**

#5

**You are Always in
The Real World!**

2017 Educational Transformers Unconference

Sponsored by Big Beacon & Lehigh University

21-23 June (Wed-Fri) 2017

@ Lehigh University, Mountaintop Campus



Mark your calendars for the first ever Educational Transformers Unconference being held at *Lehigh University's Mountaintop Campus* this 21-23 June 2017 (Wed-Fri).

While the highlight of many conferences is a dreary death by powerpoint that results in little or no change back on campus or out in the world, this intimate and active gathering brings together some of the most creative, passionate, and active thought leaders and educational transformers **to share, to reflect, to learn, and create** with the aim of accelerating change in higher education and education more generally.

Join Big Beacon networkers and other like-minded and like-hearted transformers to **engage mind-to-mind, hand-to-hand, and heart-to-heart** for the first time, share stories of transformation, and exchange inspiring ideas in the spirit of the Big Beacon movement.

