



"Igniting STEM  
Education through  
Social Innovation"

By **Giuliana Huerta-Mercado**  
*Founder and President*

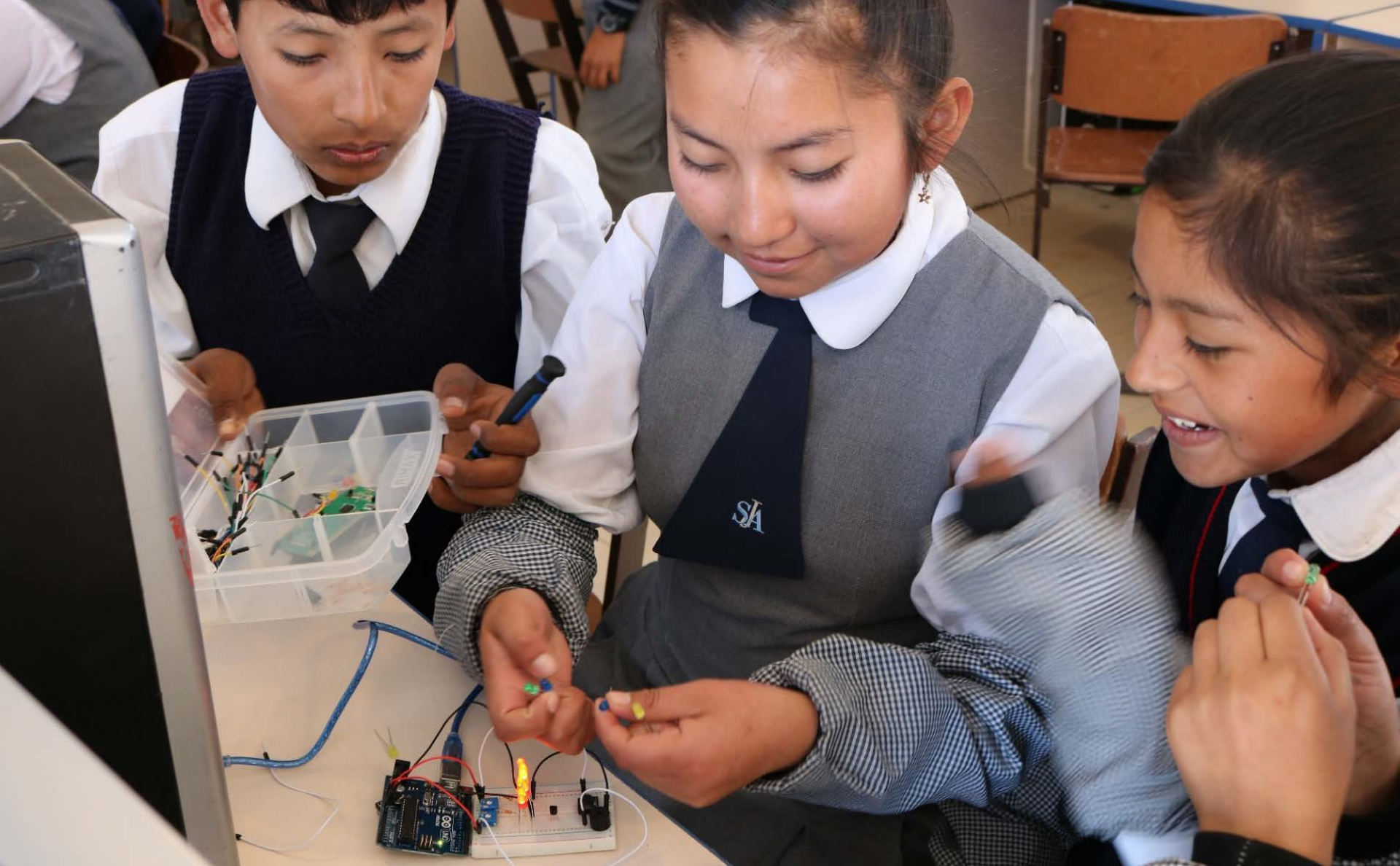


Happy to share my experience and learn from yours!!



UTK's field work at 3900 masl





Igniting engineering and science spark





Peruvian Landmarks





Challenges of a developing country

"Education is the most  
powerful weapon  
we can use to  
change the world."

— Nelson Mandela







Traditional Education System





Traditional Science Fair

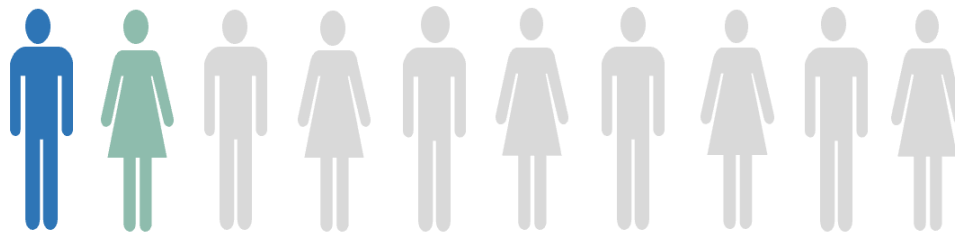
# Preocupantes resultados de la PISA 2012

<div><div></div><div>PAÍSES CON ALTA CALIFICACIÓN</div></div>		DESEMPEÑO EN MATEMÁTICA		DESEMPEÑO EN COMPRENSIÓN LECTORA		DESEMPEÑO EN CIENCIAS	
	PUESTO						
	1	Shanghái	613	Shanghái	570	Shanghái	580
	2	Singapur	573	Hong Kong	545	Hong Kong	555
	3	Hong Kong	561	Singapur	542	Singapur	551
	4	Taipei	560	Japón	538	Japón	547
5	Corea	554	Corea	536	Finlandia	545	
	PROMEDIO OECD	494		496		501	
<div><div></div><div>PAÍSES CON BAJA CALIFICACIÓN</div></div>	61	Jordania	386	Argentina	396	Túnez	398
	62	Colombia	376	Albania	394	Albania	397
	63	Qatar	376	Kazajistán	393	Qatar	384
	64	Indonesia	375	Qatar	388	Indonesia	382
	65	Perú	368	Perú	384	Perú	373

2012 PISA Evaluation catastrophic results



Do you enjoy  
STEM courses?



=

22%

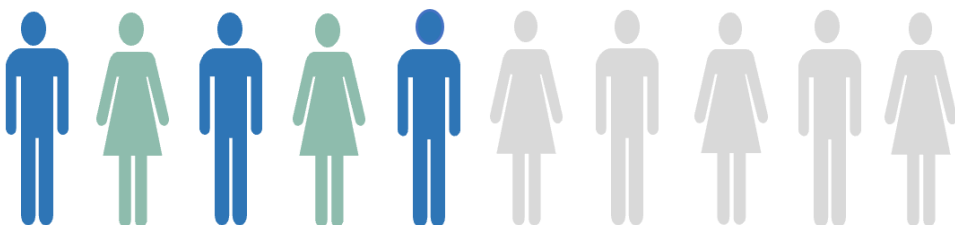
Do you know  
someone who studies  
a STEM career?



=

42%

Do you receive  
advice about STEM  
careers at school?

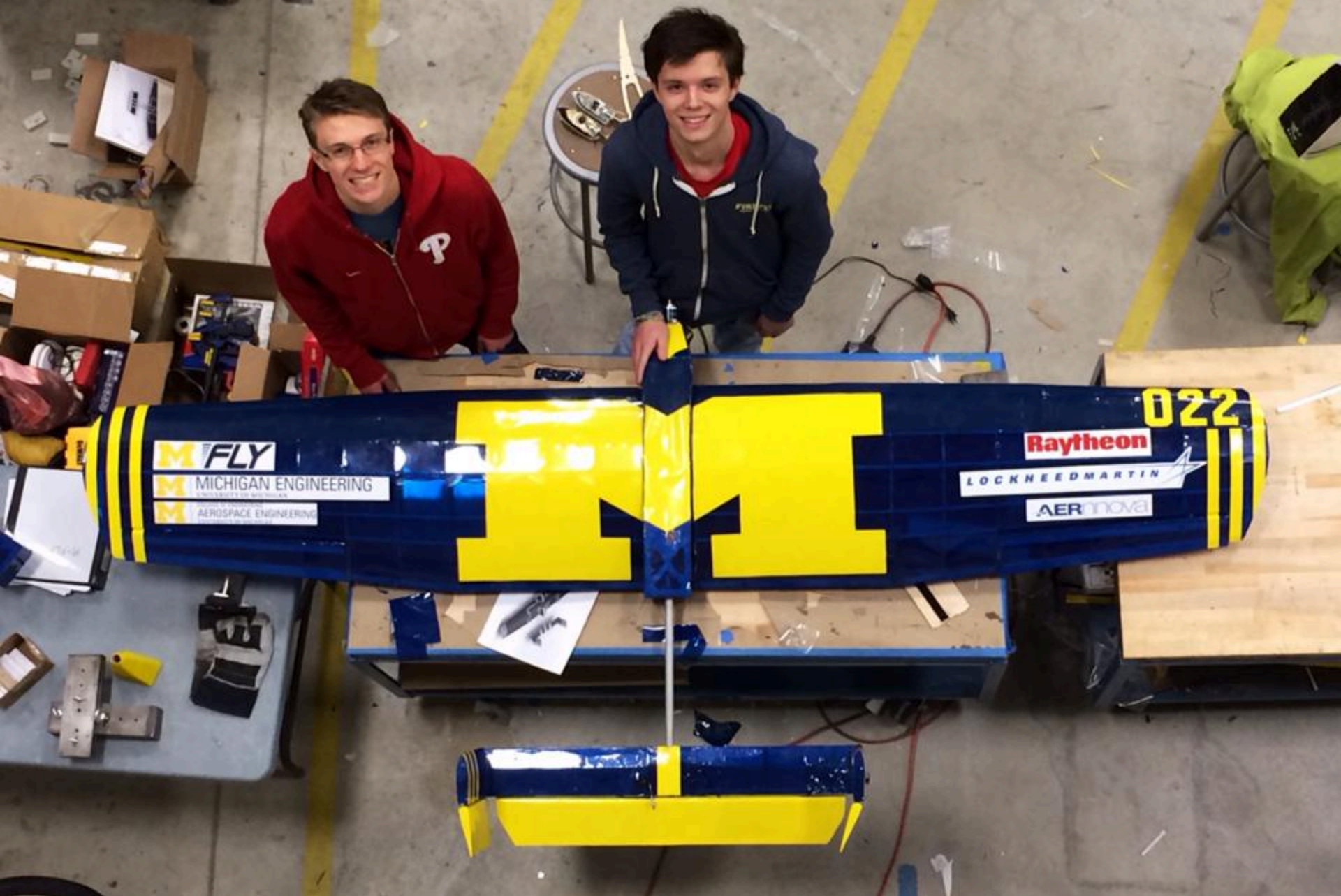


=

55%

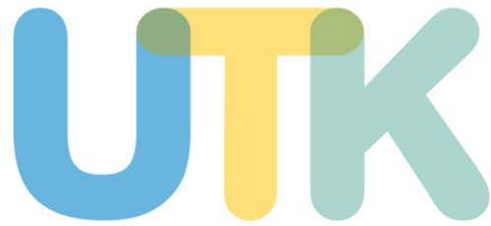
Source: Concytec

STEM Preferences in Lima's schools



M-FLY Student Organization





United  
Technologies  
for Kids

▶ MISSION: Promote STEM Education in high schools in developing countries

▶ GOALS:

- ▶ Increase the interest for science and technology in high school students.
- ▶ Improve the percentage of high school graduates that choose STEM majors.
- ▶ Positively impact low income communities through social innovation projects using technology.



# UTK TEAM



Giuliana Huerta-Mercado  
Founder and President

- Economics at the University of Michigan



Andrés Ugaz  
Technology Director

- Mechanical Engineering at UTEC



Inés de Piérولا  
Communications Director

- Psychology at Universidad de Lima





MIT

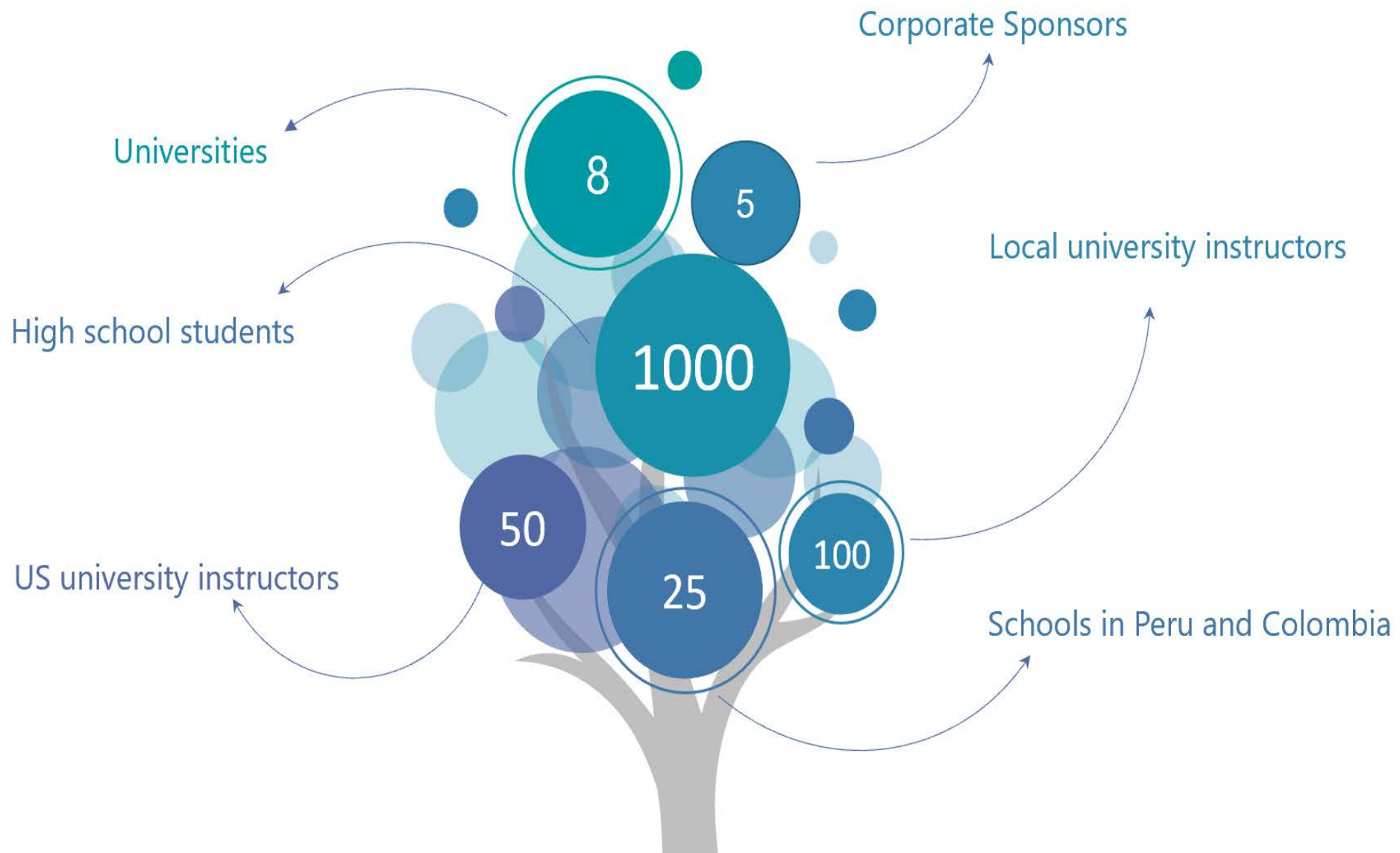


UC Berkeley



*Knowledge &  
technology  
transfer*





UTK's STEM Education Ecosystem





Role of university students





UTK's Recruitment Process





## Instructors Profile

- Engineering & Sciences
- Communication Skills
- Empathy and inspiration



Instructors as friends

- Youths to youths
- Role Model
- Why not me?





Diverse group

- International + local
- Multicultural





San Juan Apóstol school

- Arequipa Province
- Villa Cerrillos







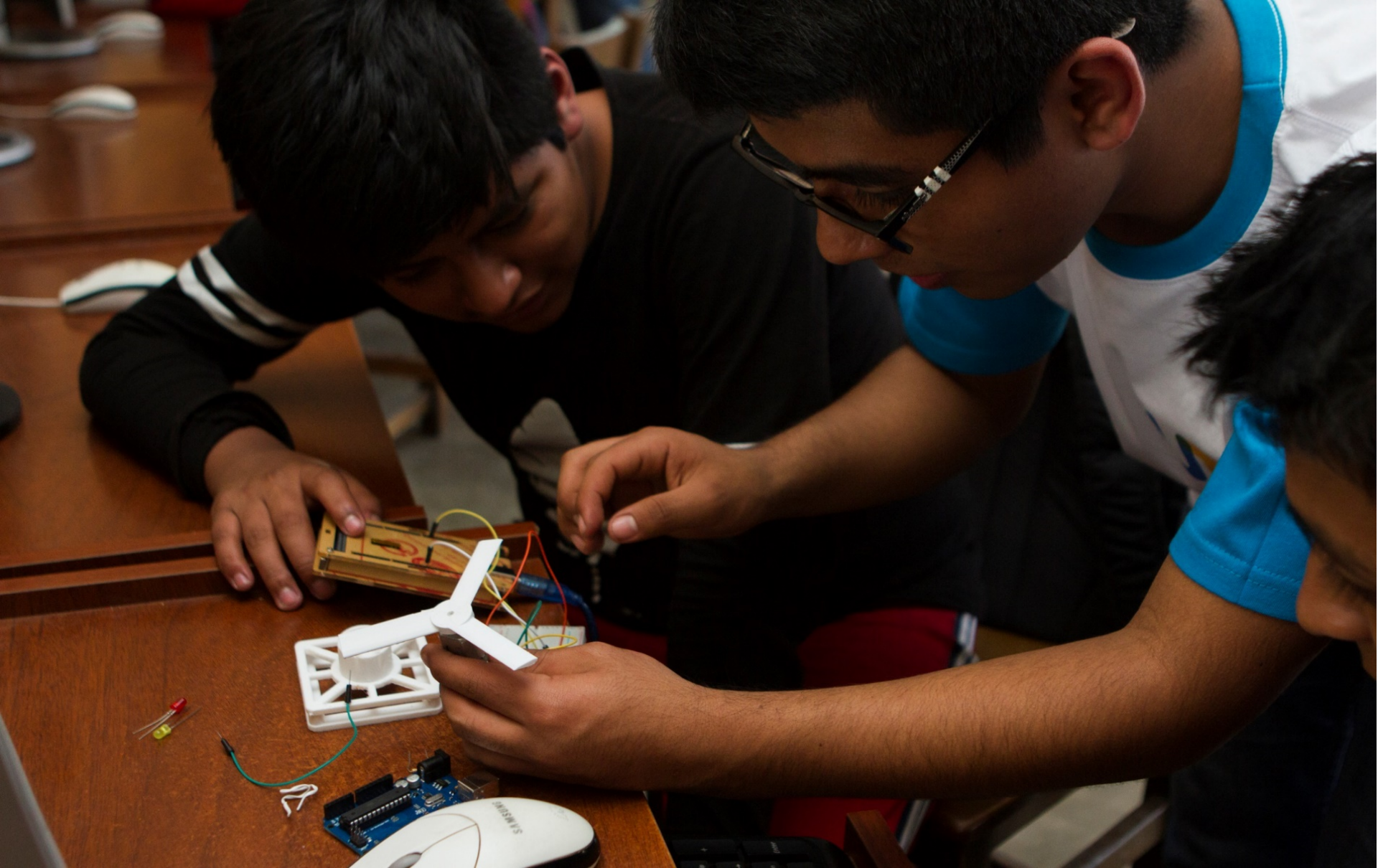
“Miss Liz, Karen is just like me, when she was a kid, she was also a sheperd , and look now all that he has achieved. I can be like her and study Engineering”



## Teaching Methodology

- Engineering design process
- Project based learning
- Teaching with Passion
- Adapt to student preferences





## Teaching Methodology

- Challenges
- Learning pace
- Multiple solutions - creative



Looks familiar?...





“I never really understood the importance of physics or math until I realized that I needed them to enhance my project”





“Delta Wing Drone”



A horizontal bar chart with three bars of increasing length and decreasing color intensity from top to bottom. Each bar is contained within a white rectangular frame with a thin blue border. The top bar is dark blue, the middle bar is medium blue, and the bottom bar is light blue. The text is white and centered within each bar.

Indicator	Percentage
26% of student changed preference to STEM Careers	26%
86% of students completed Social Innovation Projects	86%
96% increased their interest in Science & Engineering	96%

26% of student changed preference to STEM Careers

86% of students completed Social Innovation Projects

96% increased their interest in Science & Engineering

Indicators

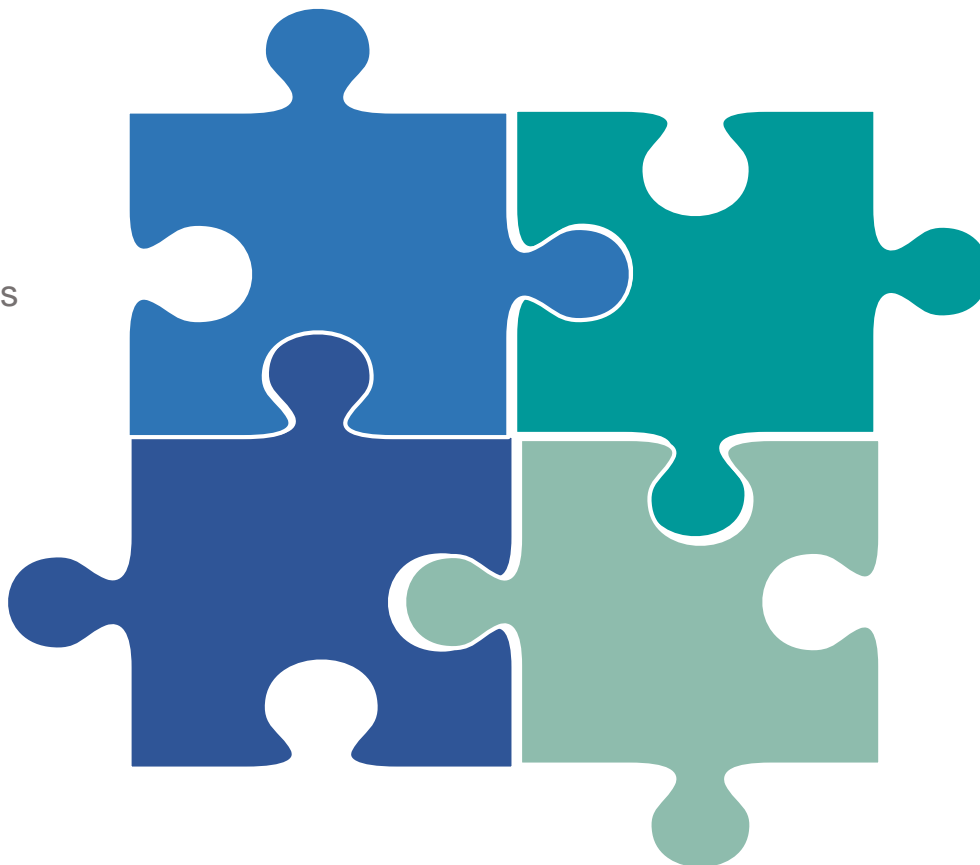




How can we make a sustainable impact ?

**Collaboration**  
Team work enhances  
soft skills

**Mentorship**  
Support system to  
tackle real world  
challenges



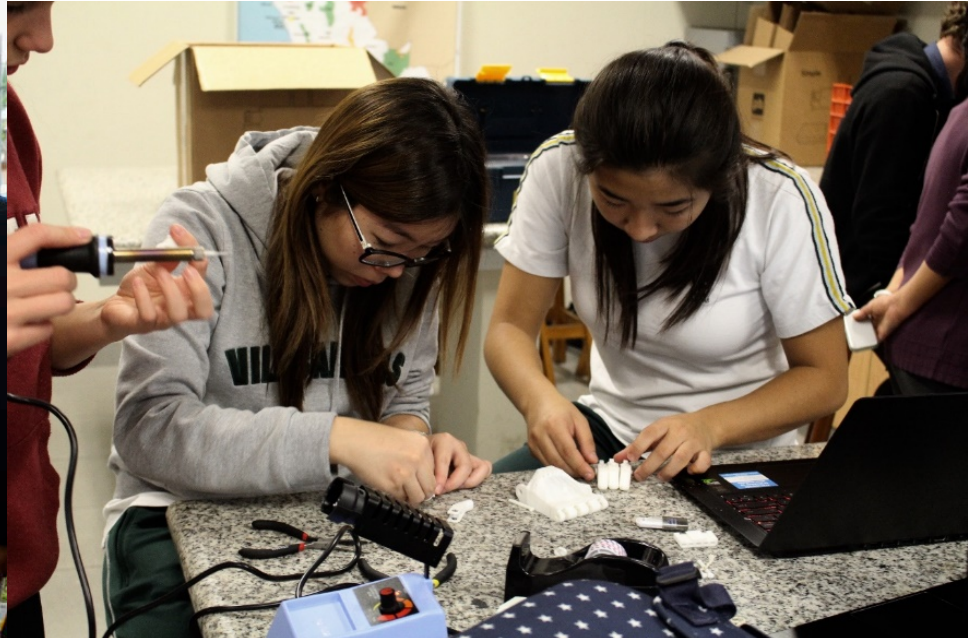
**Take Action**  
Believe you are capable  
to create change and  
build real solutions to  
real problems

**Empathy**  
Understand  
community needs

# SOCIAL INNOVATION







Multiple Social Innovation Projects





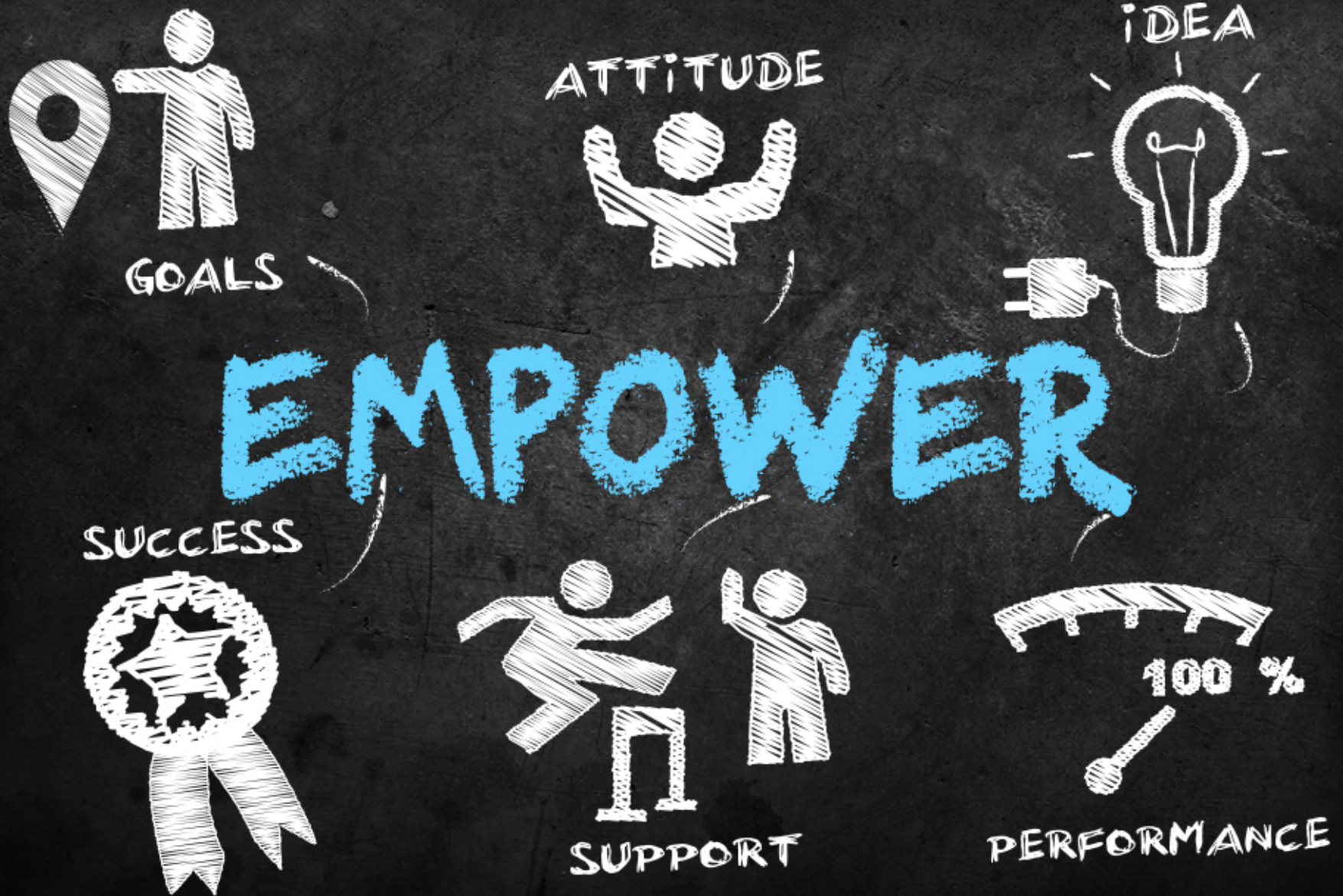
Solar powered automated Irrigation System





Project Escalation: Colegio San Juan Apóstol playground





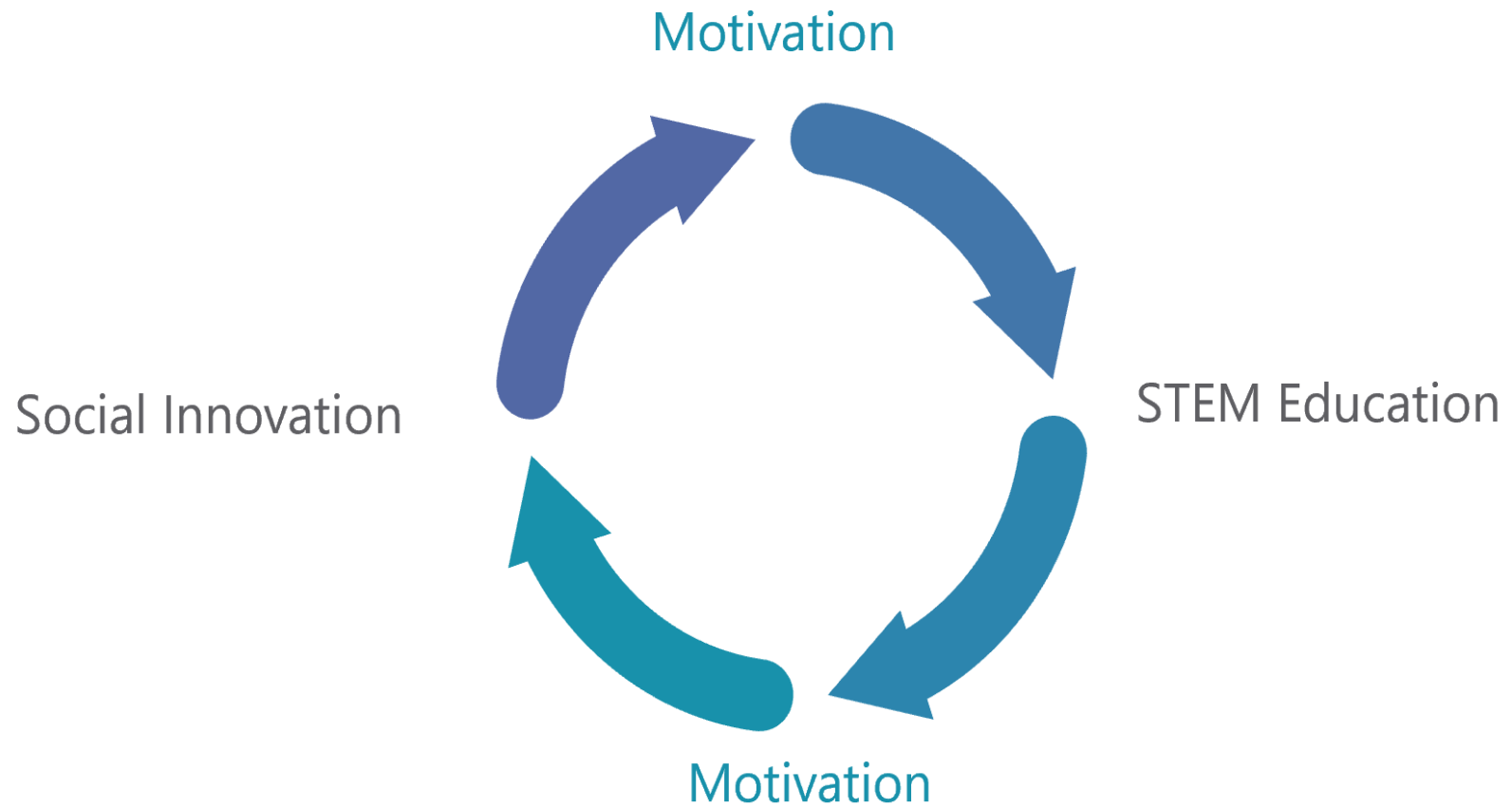
Students become Change Agents



NEW MINDSET

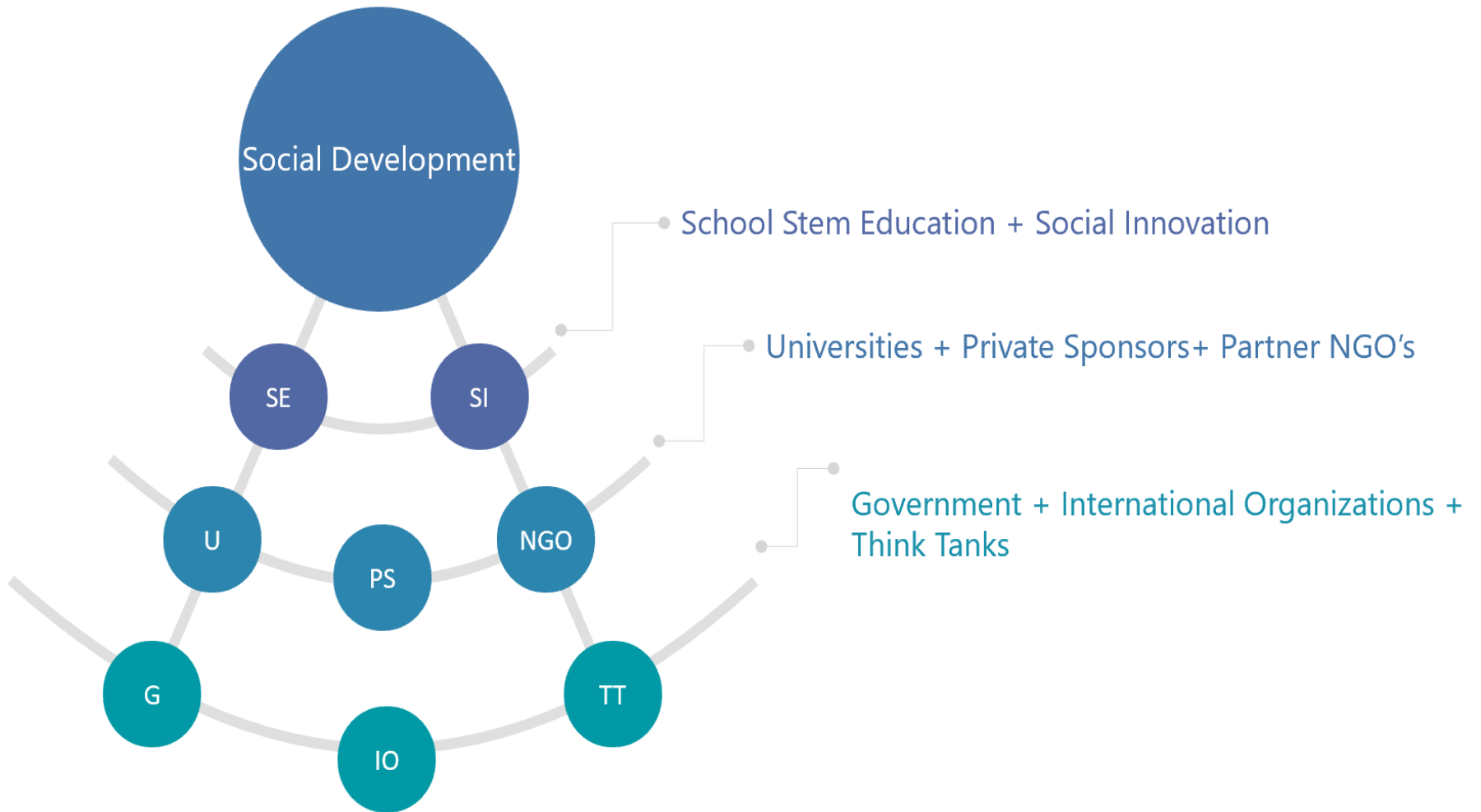


NEW RESULTS



Virtuous Re-inforcing Cycle





## UTK's Systems Approach



# Take-Aways



**Community development**



**Change agents**

Social values mindset



**Social Innovation**

Real world impact with technology



**Self-Efficacy**

Projects + Challenges



**Hands-on STEM education**

Motivation + Immediate retribution + Creativity



**Inspiration**

Role models + Mentorship

# UTK | United Technologies for Kids



THANKS!!!