

# **EPICS**<sup>IN</sup>**IEEE**

Engineering Projects In Community Service

## **IEEE Region 8 AdHoc on EPICS in IEEE**

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IEEE Sweden Section

# Agenda

- About EPICS in IEEE
- Mission & Vision
- What is Service Learning?
- How the Committee Operates
  - Project Review Process
- How can you help?
- The committee

# About EPICS in IEEE

History and the program today!



## EPICS in IEEE Overview

Engineering Projects in Community Service (EPICS) was started at Purdue University in 2005 to benefit both engineering students and the community.

IEEE adopted the philosophy of EPICS by creating the EPICS in IEEE committee in 2009. EPICS in IEEE empowers students to work with local service organizations to apply technical knowledge to implement solutions for a community's unique challenges.

EPICS in IEEE not only assists communities in achieving their specific local community improvement goals but also encourages students to pursue engineering for community improvement as a career.

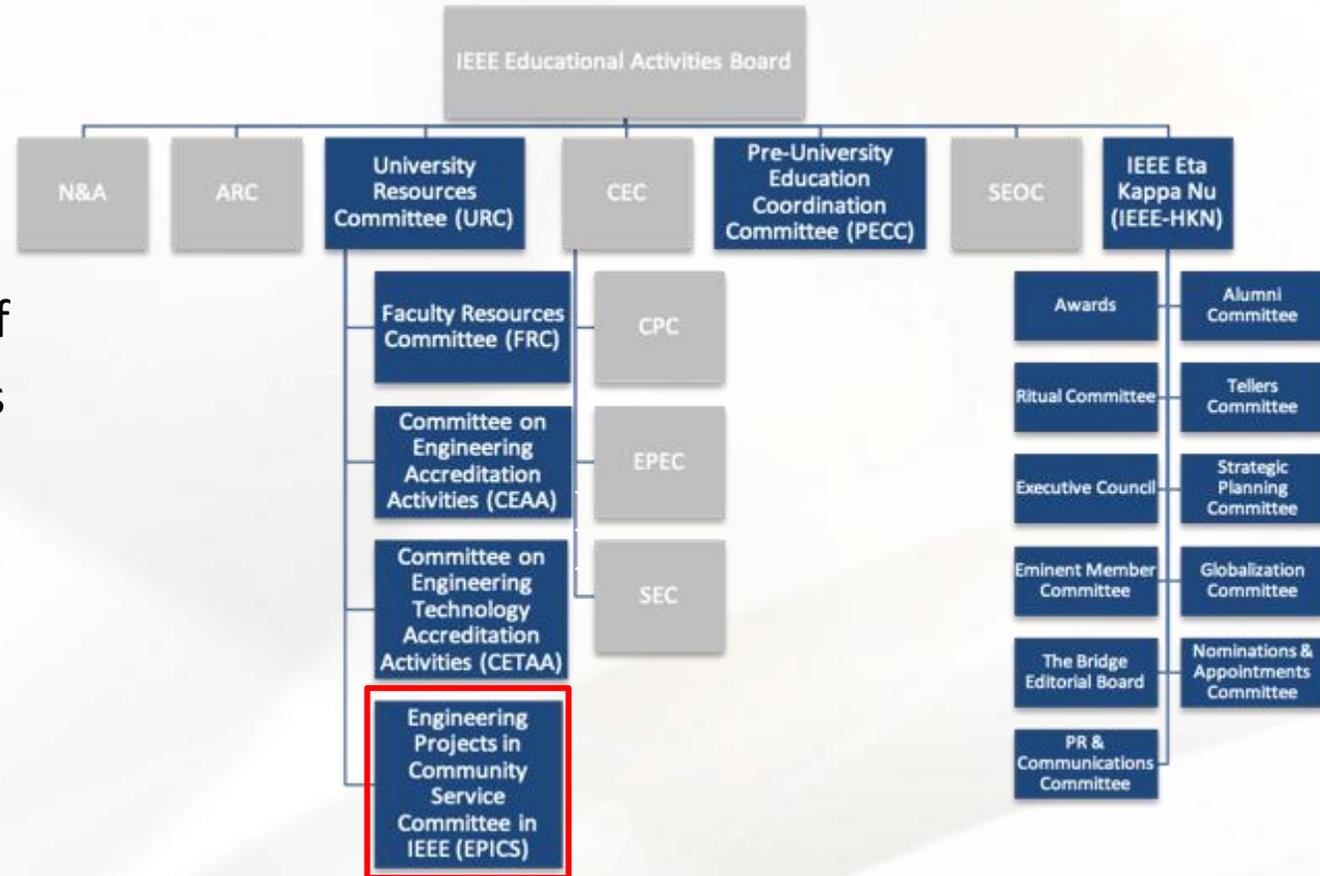
By bringing together student branches at universities, IEEE volunteers, secondary students and non-profit organizations, there is a greater ability to solve issues within communities.

***“ EPICS helps fulfill the IEEE core purpose of fostering technological innovation and excellence for humanity. EPICS provides funding, support, mentorship and visibility for engineering projects. ”***

# Overview of EPICS in IEEE Structure

Support for EPICS in IEEE program includes the following:

- EPICS in IEEE Committee Reports University Resource Committee (URC) and to the Educational Activities Board
- The EPICS in IEEE Program Manager is part of the Student & Academic Education Programs team within the Educational Activities department at IEEE
- Philanthropic Partner IEEE Foundation



# Supporting the Advancement of Engineering Education

Solving community challenges through the power of technology and education, EPICS gives students a platform to work with engineering professionals to develop solutions that transform communities across the globe.

We champion a unique, service-learning approach to Engineering Education that focuses on hands-on experience and holistic skill development.

From involvement in EPICS in IEEE students can develop professional skills such as empathy, project management, adaptability, communication and leadership.

***Technology can change the world, but it takes people working together, using skills such as communication, collaboration, and creativity to apply technical solutions to community challenges.***

# History of EPICS in IEEE

Engineering Projects in Community Service (EPICS) is a service learning program developed at **Purdue University** in which university and high school students work on engineering related interdisciplinary projects with local non-profit organizations.

- There are EPICS programs at Universities, mainly in the US and India
- EPICS has been successful in retaining students in engineering related disciplines while increasing gender and ethnic diversity.
- EPICS projects tend to be highly multi-disciplinary across departments both inside and outside of engineering allowing a realistic view of practical work situations outside of the engineering classroom

EPICS in IEEE was brought to IEEE from Purdue University in 2009 to promote service learning outside of structured university programs. The EPICS-in-IEEE program is the first program to adopt service learning at a large scale within the context of a professional technical society. The infrastructure that is provided by **IEEE allows the EPICS-in-IEEE program to disseminate EPICS (and more broadly, service learning in engineering education) worldwide** while introducing other innovations into the program

# EPICS in IEEE Mission

## Connecting Engineering to Community Service

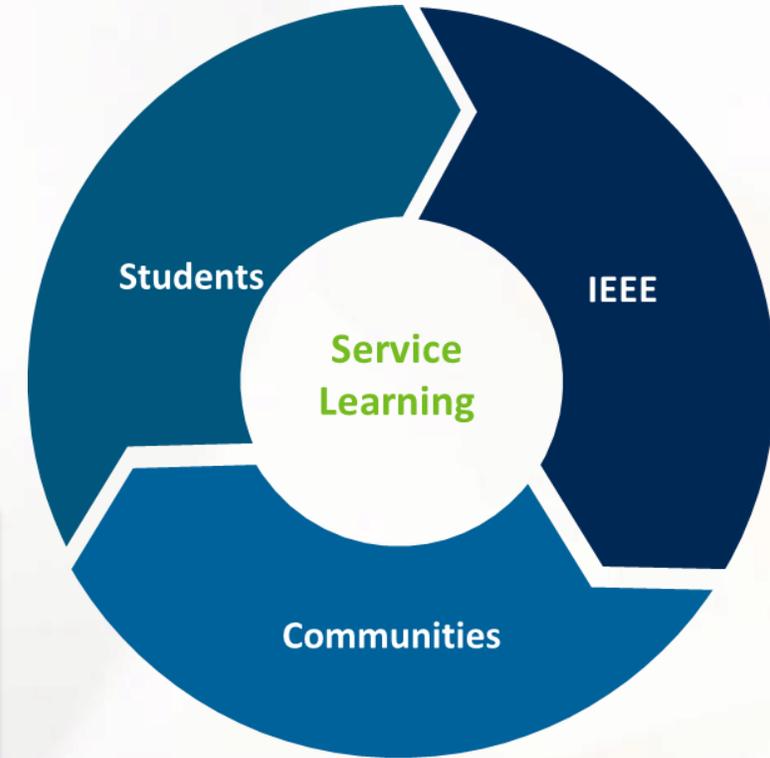
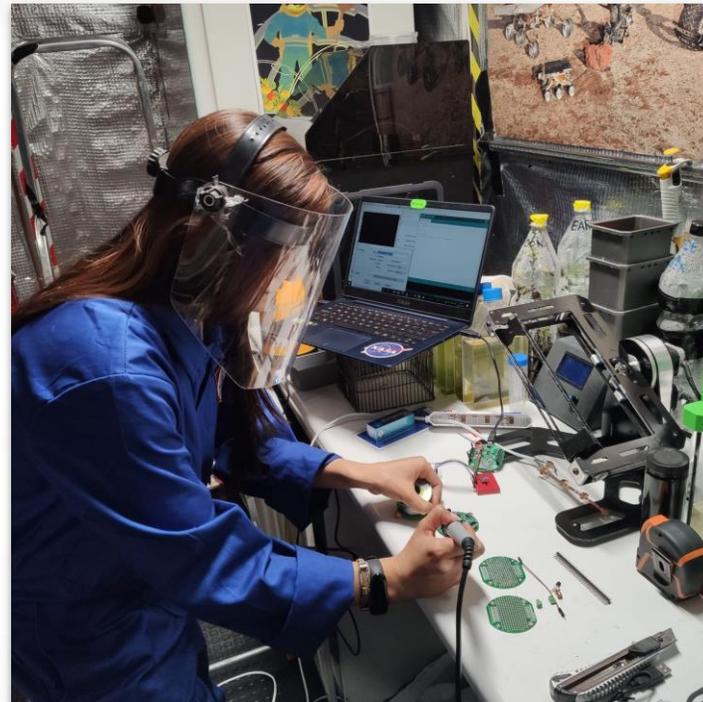
Solving community challenges through the power of technology and education, EPICS (Engineering Projects in Community Service) gives students a platform to work with engineering professionals to develop solutions that transform communities across the globe. We are committed to fulfilling the IEEE core purpose of fostering technological innovation and excellence for the benefit of humanity.



# EPICS in IEEE Vision

Engineering Education is Intimately Connected to Community Service.

The program strives to assist educators and students alike to apply their knowledge in engineering disciplines to build not just products, but to build and improve community!



- Empowering Students. Improving Communities.
- The heart of EPICS in IEEE is service learning

## 4 Project Pillars

- *Access and Abilities*— EPICS in IEEE Access and Abilities projects help enable adaptive services, technological solutions for those in need (such as children with disabilities), and assistive technologies. Projects often focus on creating equitable solutions, or accessible solutions for various populations including individual who are blind, use a wheelchair, are hearing impaired, etc.
- *Education and Outreach*—EPICS in IEEE strives to help young students to discover the benefits of science, math, technology and engineering for their futures. EPICS in IEEE projects in this category often emphasize the creation of new, innovative materials that can be used to engage K-12 students in STEM exploration. Differing from traditional outreach events, EPICS in IEEE education and outreach include student participants creating the materials that will often be used for younger students or broader community member education.
- *Environment*—Engineering and science are key solutions to answering environmental issues. Many EPICS in IEEE projects concern themselves with new ways to create electricity and energy, recycling and the use of renewable energy sources. Projects here have an emphasis on improving the local environment and can focus on minimizing human impact to land, air, or sea
- *Human Services*—Through their experiences in Human Services EPICS in IEEE projects, students find connections between engineering and the tremendous scope of community needs globally. This may include exploring topics like homelessness prevention, affordable housing, family and children agencies, neighborhood revitalization and food insecurity.

# Program Metrics

2009-2022

## Funding

- **932K** given out in funding since 2009
- **180** Projects since 2009

## Engagement

- **780** IEEE Volunteers engaged
- **4,100** University Students
- **6,300** Pre-University Students

## Impact

- Estimated People impacted: **1,560,000**

## Project Pillars

- Access and Abilities (47/180) 26%
- Education (45/180) 25%
- Environmental (52/180) 29%
- Human Services (36/180) 20%

## EPICS in IEEE in 31 Countries

Africa	16%
South America	13%
North America	40%
Europe	3%
Asia	28%

# EPICS in IEEE Environmental Competition 2022

**EPICS  
IN  
IEEE**

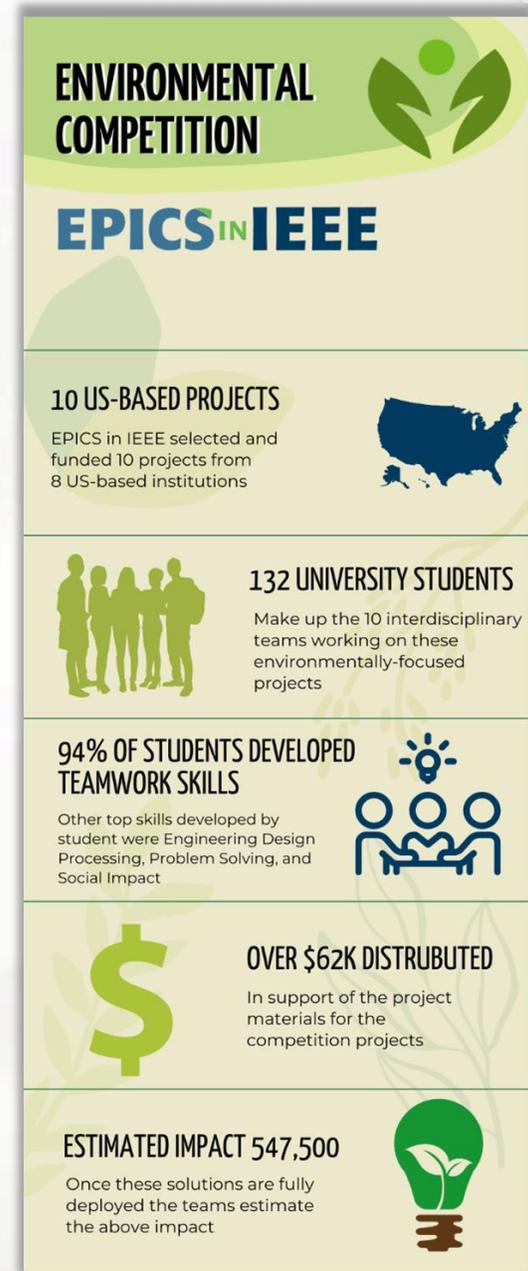


In partnership with



**Environmental Competition**

In the original call for proposals, the total amount awarded in project grants was \$57,761.20. Three of the ten projects received phase two funding for a total of \$4,705.00, resulting in a total of \$62,466.20 given out in funding.



# Impact on Students

“Communication and collaboration are the two main things that I’ve learned throughout EPICS. The project has an engineering component to it and an interpersonal component that involves interacting with stakeholders, your teammates – a whole network.”

Seth Storino, Hydration Station Project, ASU

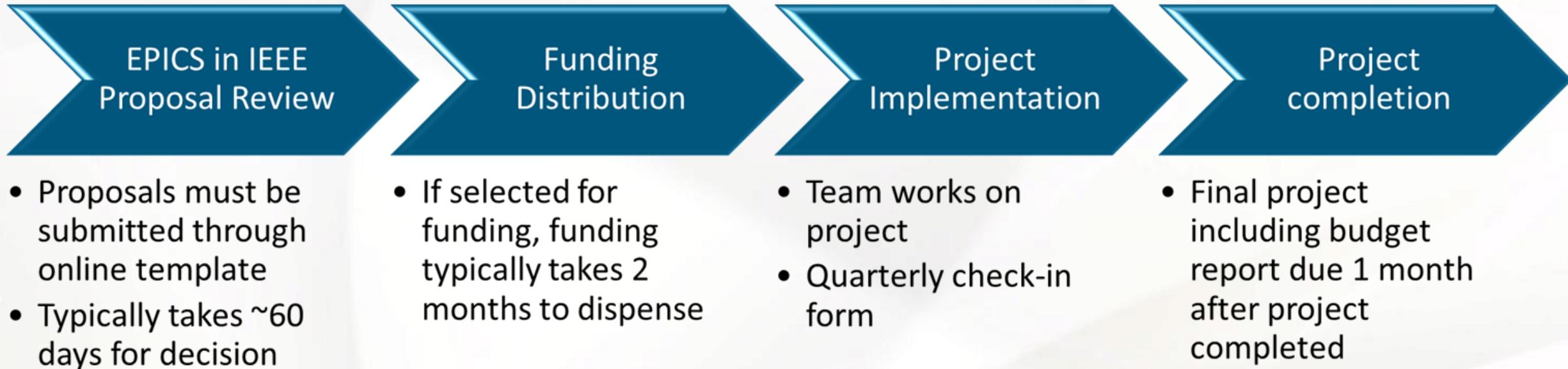


“Merely engaging, talking, and working with the National Association for the Blind helped us look at problems from a different angle,” This team has learned a new sense of empathy, a skill which is high in demand, and one that cannot be learned without real-world experience.

Tejas MR, Design and Development of Head-mounted Assistive Device for the Blind Using Computer Vision

# Project Proposal Funding

# Proposal and Funding Timeline



## What does an EPICS in IEEE proposal include?

- Problem summary and justification
- Description of partnering organization (nonprofit or NGO) and their role
- Proposed technological solution
- Project planning documentation
  - Solution Details
  - Budget
  - Timeline
  - Team Composition
- Impact and assessment plan

# How can you help?

Request to all Section Chairs

## Help the AdHoc by:

- Promoting EPICS in IEEE in your section. Inform them about the funding opportunities
- Connecting students with our committee, we can do the talking and help them submit the proposals
- Invite us for a webinar in your sections, sub-sections
- Coach student groups in preparing good project proposals
- Mentor projects if you have interests

# Committee Members

- Samarth Deo      [samarthdeo@ieee.org](mailto:samarthdeo@ieee.org)      Sweden      Confirmed
- Ana Cigaran      [ana@ieeer8.org](mailto:ana@ieeer8.org)      Germany      Confirmed
- Abdulla Al-Kaff      [akaff@ing.uc3m.es](mailto:akaff@ing.uc3m.es)      Spain      Confirmed
- Anwesh Kumar      [anveshkmr150@gmail.com](mailto:anveshkmr150@gmail.com)      Egypt      Confirmed
- Flavia Dinca      [f.m.d@ieee.org](mailto:f.m.d@ieee.org)      Benelux      Confirmed
- Ezabo Baron      [ezabobaron@outlook.com](mailto:ezabobaron@outlook.com)      Uganda      Confirmed

# Thank You!!

You can reach out to any of our committee members, but also the EPICS in IEEE Global committee through:

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