

The United Nations Envisions Sustainable Development Goals

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The 2030 agenda adopted by the United Nations General Assembly for sustainable development includes 17 Sustainable Development Goals (SDGs), shown in Figure 1. Building on the principle of “leaving no one behind,” the new agenda emphasizes a holistic approach to achieving sustainable development for all.

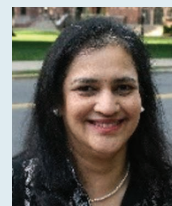
The IEEE Antennas and Propagation Society (AP-S) Committee on Promoting Equality (COPE) is positioning efforts for goal 17 toward enhancing and strengthening partnerships and collaborations among IEEE technical Societies, local industries, and communities to “Leverage the Best-in-Class Tech to Achieve SDGs.” This cooperation is a win-win model that allows forward-thinking technology professionals to collaborate, shape, and share research for addressing diversity, equity, and inclusion (DEI).

COPE is progressing activities to achieve its mission under the superior leadership of Prof. Weng Chew, COPE chair, and Dr. Ajay Poddar, who serves as cochair. A global announcement was made to all of the AP-S Chapters about submitting their COPE project proposals. The list of projects was reviewed,

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EDITOR'S NOTE

As the IEEE Antennas and Propagation Society (AP-S) Committee on Promoting Equality (COPE) makes progress, it gives us immense pleasure to bring this initiative to your attention via the “COPE Corner” column in *IEEE Antennas and Propagation Magazine*.



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presented virtually on Zoom, and discussed at length to ensure that DEI is promoted in IEEE to create an inclusive and equitable culture that welcomes and engages without regard to race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression (<https://www.ieee.org/about/diversity-index.html>).

AP-S COPE initiatives are geared to motivate students and young professionals to enrich their experiences when they join a diverse community, engaging with local Chapters, Sections, academic and research institutions, and industries to leverage technology for the benefit of those who need it most. The COPE agenda for developing the humanitarian aspects of engineering skills can be achieved by implementing COPE projects to respond to challenges in the spirit of partnerships and collaborations as

well as creating a mechanism to attract potential members to get involved with COPE activities.

The following COPE projects that were reviewed give a glimpse of how this agenda is being addressed in all regions globally, with the involvement of local Chapters working with industry and other organizations to serve communities in the most unique ways:

- *IEEE North Jersey Section AP-S Chapter (30 August 2021)*: This project aims to provide science, technology, engineering, and mathematics (STEM) workshops to local Girl Scout troops throughout New Jersey (Figure 2). The goal is to introduce or provide a high level of STEM involvement that may result in the Girl Scouts completing the requirements for a badge as well as getting hands-on experience in a



FIGURE 1. The 2030 United Nations Agenda for Sustainable Development Goals. (Source: <https://www.un.org/development/desa/disabilities/envision2030.html>; used with permission.)

STEM-related field, thus introducing them to science and engineering.

- **IEEE Kerala Section AP-S Barton Hill Chapter (4 September 2021):** The Kerala Section is planning to use the funds for the benefit of students of the Government Upper Primary hill-based tribal school, with students coming from a marginalized community (tea plantation workers between grades one and seven) situated in Ponnudi, Kerala, India (Figure 3). The funds will be primarily used to 1) establish and install a smart classroom in the school; 2) provide young students with some necessary learning materials; 3) giving the children textbooks, notebooks, and water bottles; and 4) offering basic e-literacy to the parents.
- **IEEE China Section AP-S Chapter (9 September 2021):** This Chapter presented a proposal to utilize the funding to organize the IEEE Computing, Communications, and Internet of Things Applications

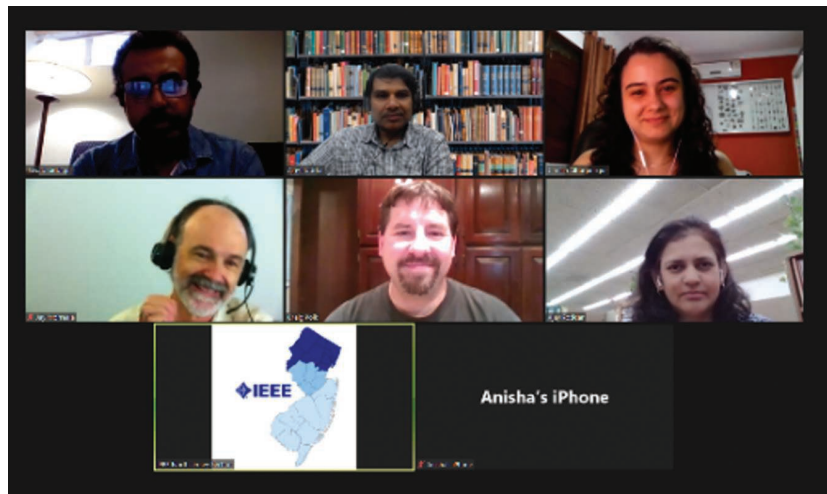


FIGURE 2. The IEEE Region 1— North Jersey Section AP-S COPE Chapter project proposal review virtual meeting.

Conference (ComComAp) 2021, which will be held in Shenzhen on 26–28 November 2021 for the benefit of AP-S members. The meeting will help participants understand current academic research directions in the world as well as communicate face to face with some well-known

global experts and scholars, thus broadening their research horizons (Figure 4). The IEEE ComComAp 2021 conference official website can be accessed at <http://ComComAp.net/2021>.

- **IEEE Bombay Section AP-S Amrutvahini College of Engineering**

Sangamner Chapter (4 September 2021): The project will use virtual and augmented reality to enable students who are deaf or nonverbal to have a practical ability to learn; help them to get a feeling for real-life activities by improving “hearing accessibility”; make learning more

accessible, memorable, practical, and engaging (Figure 5). AP-S student members are going to use artificial intelligence tools to enhance these students’ learning experiences, and they are ready to implement this project in the Sangram Deaf and Dumb Niwasi Mukbadhir School,

Velhale, Tal-Sangamner, District Ahmednagar, Maharashtra, India.

Another project, the “Solar Ambassador Workshop,” will be organized at the Malwadgaon village Jillhparishad Prathamik School, District Ahmednagar in the Maharashtra state of India. The initiative will provide solar lamp kits to students, which they will assemble during the workshop. Children and parents will also be taught how to own, manage, and operate solar enterprises at every level, including the assembly, sale, after-sales service, and manufacturing. The village has a lot of electricity problems, especially during nighttime shut-downs. Therefore, the idea of solar lamp creation and donation is relevant and required.

- *IEEE Bangalore Section AP-S Chapter (4 September 2021)*: Schools in the rural parts of Bangalore accommodating high school and junior college students have elementary and inadequate access to library facilities, computers, the Internet, and basic science labs. This AP-S COPE project plans to set up these facilities in a rural school (Figure 6). They are sustainable for a long time and will benefit many students, irrespective of their gender, age, or religion.
- *IEEE Pune Section AP-S Chapter (4 September 2021)*: The project named *Eu-Reka 2021* uses college students as “Ambassadors of Education” to motivate high school children to take up higher STEM education (Figure 7). The focus of the *Eu-Reka 2021* program is to “lend a hand to raise the education ‘Reka’ of the country.” (*Reka*, in many Indian languages, means “a line.”) *Eu-Reka* symbolizes raising the national STEM literacy “Reka” level. The event proposes creating curiosity and interest in STEM for high school children; providing exposure to front-line STEM technologies; encouraging rural school-children, including girls, to take up higher studies in STEM; working toward reducing the dropout rate at the high school level by addressing

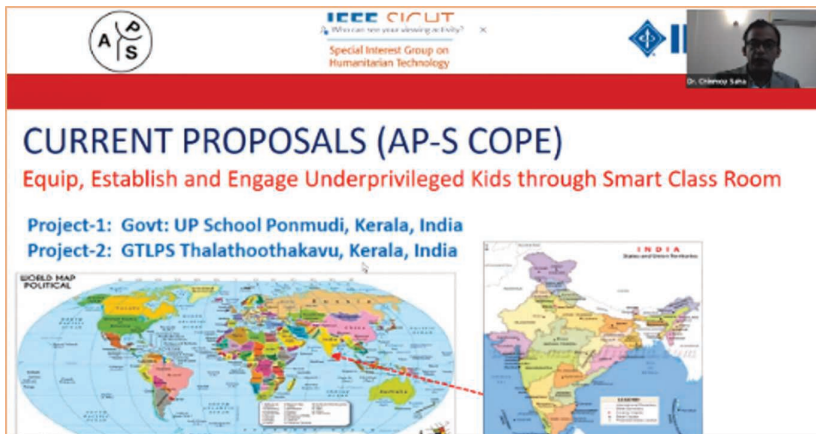


FIGURE 3. The IEEE Kerala Section AP-S Chapter COPE project proposal review virtual meeting.

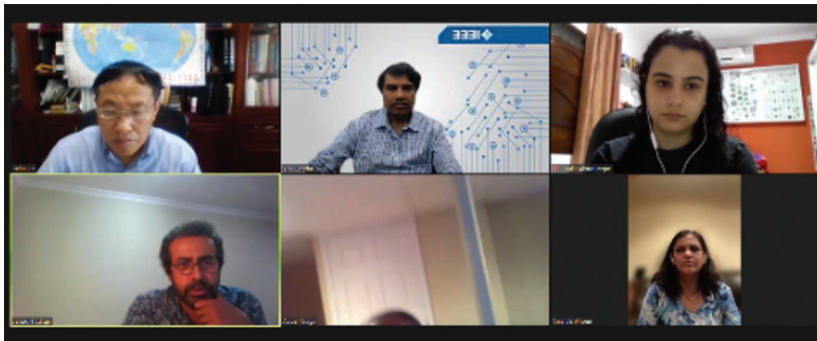


FIGURE 4. The IEEE China Section AP-S Chapter COPE project proposal review virtual meeting.

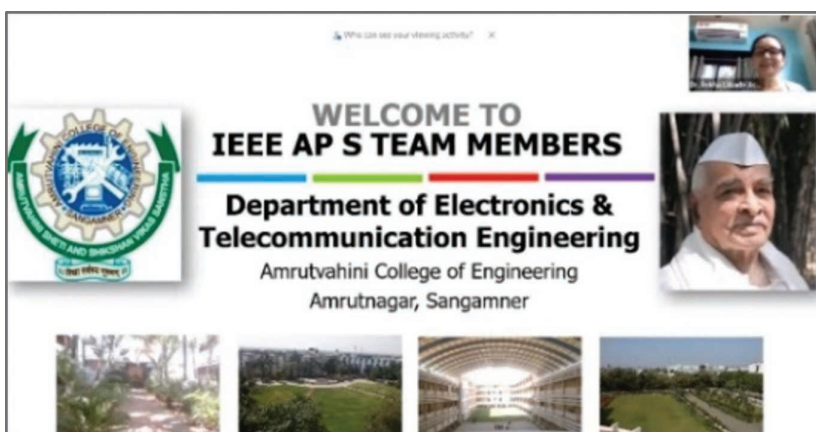


FIGURE 5. The IEEE Bombay Section, Amrutvahini College of Engineering, India—COPE project review virtual meeting.

the benefits of higher education in STEM; and increasing the confidence, self-esteem, and aspirational levels of high school girls to enable them to make decisions for themselves with respect to higher education. The funds will be utilized to provide 1) support to schools for holding interactive sessions, 2) incentives to participants, and 3) field trips.

- *IEEE Region 8—Africa (3 August 2021)*: This project plans to collaborate with Woreilu Worldwide Development Association (WWDA), which is working with nonprofit suppliers of donated school materials for the Woreilu region of South Wollo in Ethiopia (<https://www.booksforafrica.org/donate/donate-project.html>). This is to improve the inadequate resources (libraries, science labs, computers, and Internet connections) and dropout rates, which are especially high among girls (Figure 8). WWDA plans to ship a container with 22,000 books, computers, and projectors.
- *IEEE Montreal Section AP-S Chapter (6 September 2021)*: The funds will be used to attract new members to join the AP-S Chapter, which has successfully worked with local communities, such as amateur radio clubs and the IEEE Teacher In-Service Program, to host technical and educational activities (Figure 9).

These are some of the projects that were reviewed by COPE, and we are still receiving several projects with the potential to make a positive impact on society. If your Chapter has not yet submitted a COPE project proposal, you can fill out a Google form (available at <https://forms.gle/JuNFfrG2MuvjFRUZA>), and your initiative will be considered for approval in 2022.

AP-S COPE aims to fund projects that make good use of IEEE expertise, exhibit a strong technological component, and show clear engagement with the community, indicating that the proposed solution is both desired and feasible. Relationships should be established—and, ideally, documented—with stakeholders who will be involved. The

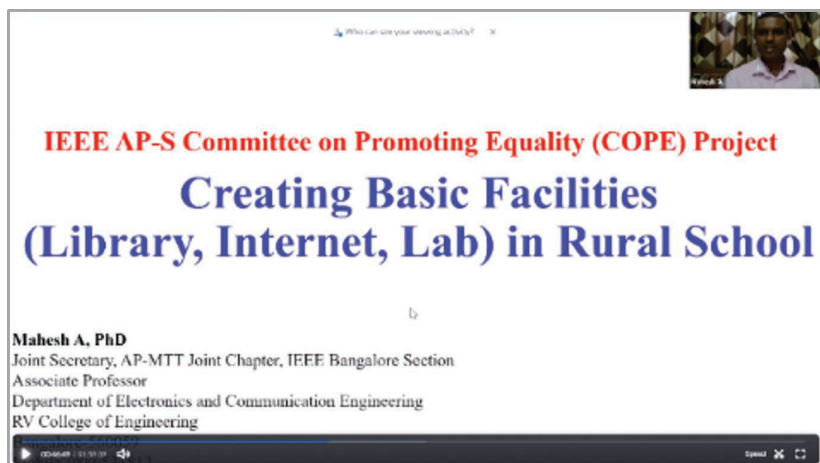


FIGURE 6. The IEEE Bangalore Section AP-S Chapter COPE project proposal review virtual meeting.

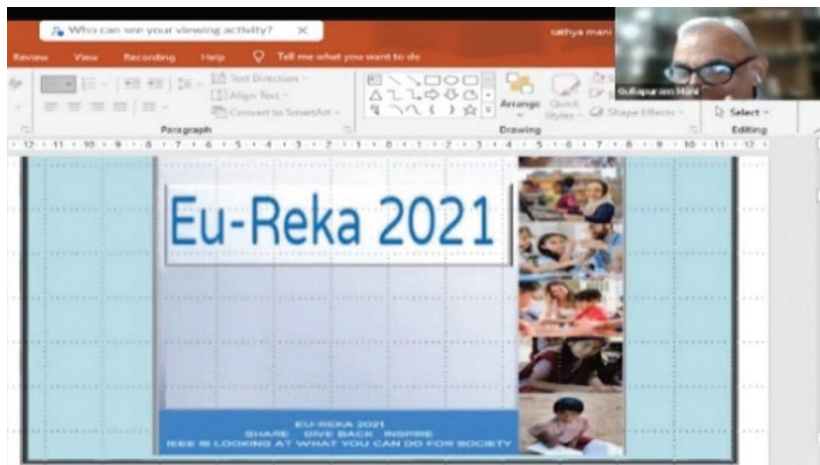


FIGURE 7. The IEEE Pune Section AP-S Chapter COPE project proposal review virtual meeting.

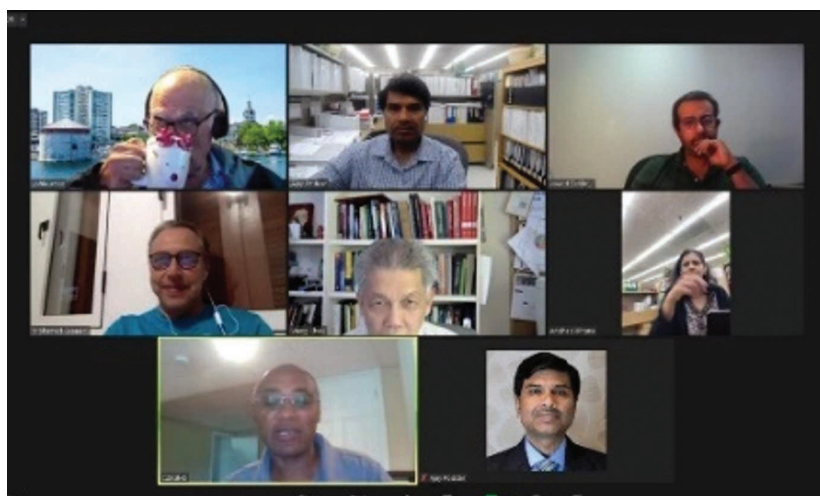


FIGURE 8. The IEEE Region 8—Africa APS Chapter COPE project proposal review virtual meeting.

(continued on page 149)

is very detailed and treats each particular subcase, making it a great reference for researchers working in this area.

This is a welcome addition to the Wiener–Hopf literature, which, until recently, comprised of only one main reference book by Noble, which is jocularly referred to as the *Wiener–Hopf bible* (the first edition of which dates back to 1958). It is also useful to mention *The Wiener–Hopf Method in Electromagnetics* by Daniele and Zich (2014), which has some similarities to the book under review. That text also discusses the Fredholm

The text is very detailed and treats each particular subcase, making it a great reference for researchers working in this area.

method of the Wiener–Hopf technique and has some sections dedicated to diffraction by wedges. However, the emphasis of the 2014 book is very different; it is a survey of all available Wie-

ner–Hopf methods and the variety of diffraction problems that could be addressed.

ABOUT THE REVIEWER

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COPE CORNER (continued from page 145)

project needs to have a clear, detailed, and credible assessment matrix, implementation plan, and budget. The team should demonstrate combined experience to credibly execute the proposal as well as identify and address potential risks, and the project must have a real, tangible impact. If a proposal is missing the mark on two or more of these areas, it might not be ready for funding.

AREAS OF FOCUS

AP-S COPE is prioritizing an immediate impact on poverty mitigation and inequality reduction through the following project areas for marginalized and underserved populations:

- upgrading facilities
- STEM education
- information and communications technology
- sustainable power sources
- water, sanitation, and hygiene.

Projects must be successfully completed and submitted to the AP-S



FIGURE 9. The IEEE Region 7–Montreal Section AP-S Chapter project proposal review virtual meeting.

through final reporting, indicating the status of the project and utilization of funds at the end of each calendar year. Expense vouchers should be submitted as supporting documents for audit. The “AP-S COPE Project Budget Template 2021” spreadsheet should be submitted for the budget proposal during the application, and an expense report should be filed on

completion of the project. Fund utilization should be clearly indicated.

Each AP-S Chapter, Joint Chapter, and Student Branch Chapter may submit multiple proposals. These are subject to review and scrutiny, and the total project funding will not exceed US\$3,000 for any calendar year.

