COPE Committee Report

March 07, 2025

IEEE AP-S COPE

Knowledge Dissemination : Ways to Promote Equality

Chair: Weng Cho CHEW[1]

Vice-Chairs: Ajay K. PODDAR[2], Anisha M. APTE[2], Meisong TONG[3]

[1]Purdue University, [2]Synergy Microwave Corp., [3]Tongji University, Shanghai, China

AP-S COPE – Committee

2025 IEEE AP-S COPE Committee

- Chair- Weng Chew
- Vice-Chairs -
  - Ajay Poddar
  - Anisha Apte
  - Meisong Tong

- **Committee Members**

•Alebel Arage
•Alexandre Jean René Serres
•Alison Candido
•Andres Navarro Cadavid
•Camila Albuquerque
• Charlotte Blair
• Christian Pichot
• Claire Migliaccio
• David R Jackson
• Jose Felix Vega
• Francesco Andriulli
• Francisco Guillermo Pizarro Torres
• Jawad Y. Siddiqui
• Junwei Wu
• Karl Warnick
• Karu Esselle
• Kubilay Sertel
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• Mahta Moghaddam
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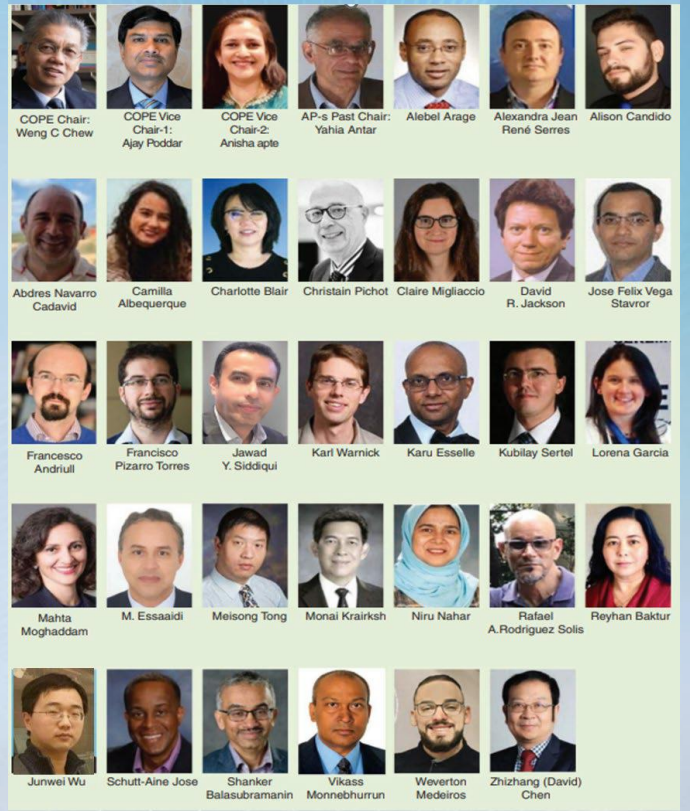
• Rafael A. Rodriguez Solis
• Reyhan Baktur
• Schutt-Aine Jose
• Shanker Balasubramanian
• Vikass Monebhurrun
• Weverton Medeiros
• Yahia Antar
• Zhizhang (David) Chen



IEEE AP-S Antennas and Propagation Society

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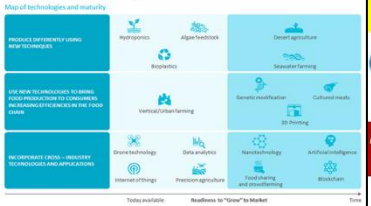
Committee On Promoting Equality (COPE)

- To mitigate inequality in gender, race, and geographical locations by a number of initiatives
- Knowledge disseminations via IEEE AP-S Chapters Globally
- Transfer of Technology knowhow via the IEEE Smart Village Program
- Emphasis of STEM (Science, Technology, Engineering, and Mathematics) to grow human resource worldwide)

Technology-Enabled Growth, Knowledge Economy and Tech Transfer

Technology Enabled Growth—Knowledge Economy

- Farming knowledge:

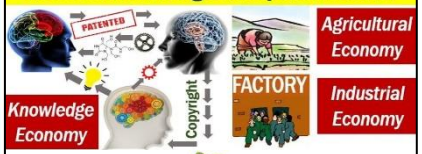


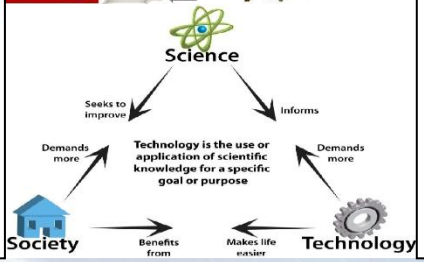
- Manufacturing knowledge:

Automated single-lens reflex camera assembly machine

Knowledge Economy

An economy where the production & use of knowledge are paramount.





Technology Enabled Growth and Tech Transfer

- Environmental protection:
  - Clean energy.
- Be plugged-in for knowledge transfer:
  - Joint venture.
    - Be a tough and informed negotiator.
    - Fair trade.
  - Win-win collaboration.
    - Promise of a larger pie.
    - Tap into untapped talents around the world.
    - Encourage knowledge transfer into the developing world.

The not extraordinary human brain Suzana Herculano-Houzel Proceedings of the National Academy of Sciences Jun 2012, 109. 100 billion neurons.

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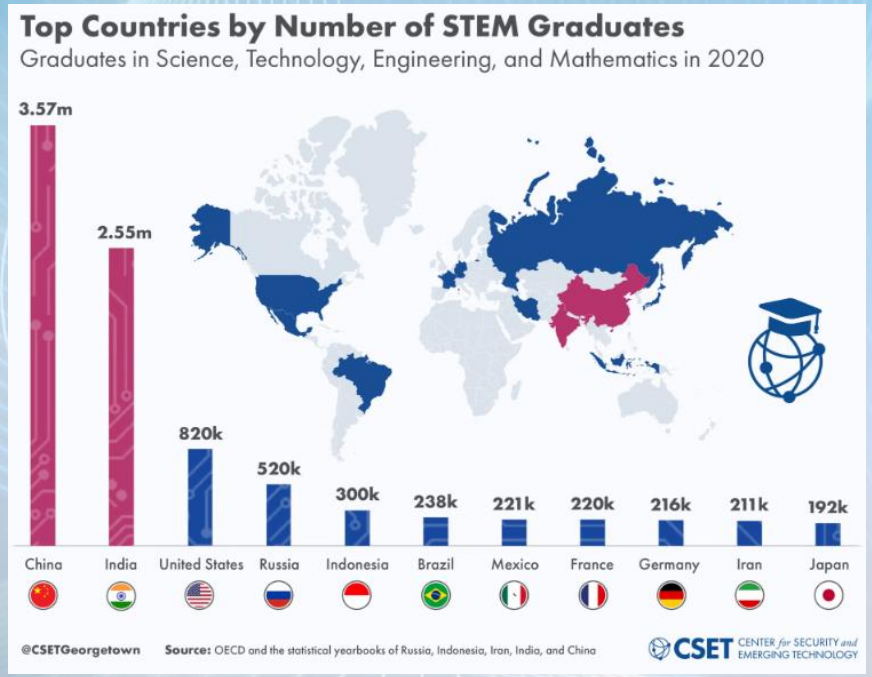
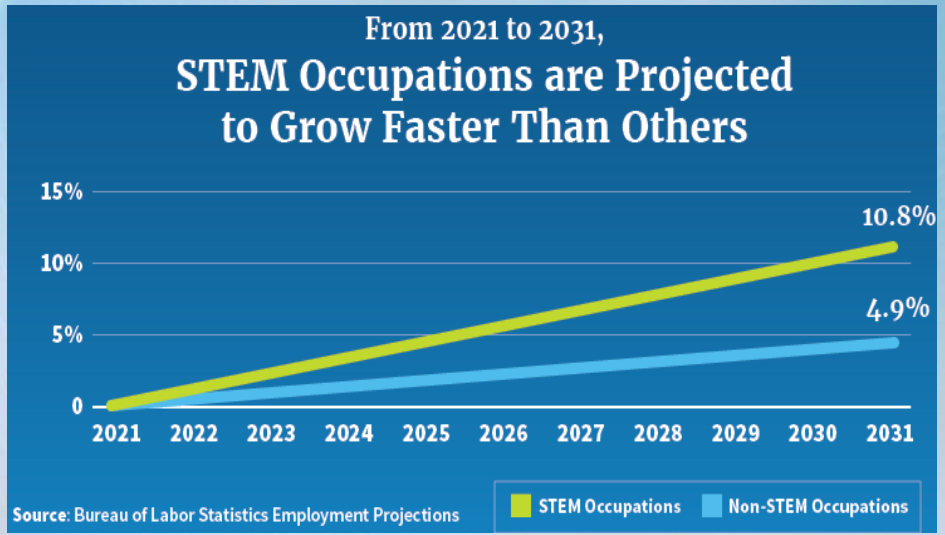
Eradication of Inequalities

STEM Education-A way to Equalize Wealth and Create Jobs





[STEM Day: Explore Growing Careers | U.S. Department of Labor Blog]

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Thrust Areas of IEEE AP-S COPE

Thrust Areas:

1. Knowledge dissemination and resource sharing via **IEEE AP-S Chapters**: **Opportunity for Chapter Activities Expansion**. Engagement with Chapters, Sections, and Local Community: A way to **mentorships** and increase the valued/needed resources for IEEE members
2. Encourage STEM education worldwide in collaboration with AP-S YP, AP-S EPIC, AP-S ISV, IEEE Inter-Soceties, IEEE Foundation, and Try Engineering (https://tryengineering.org/). We believe that the gender, racial, ethnic, and regional inequalities we face start early in life and must be solved very early. One way to counter and mitigate these inequalities is through education, especially STEM Education, by sharing best practices around the world.
3. Develop strong connections with the local community (travel, when possible, to make direct contact) & build deep relationships, listen carefully to their perceived needs, share successes with other Sections/Chapters so they can replicate COPE initiatives.
4. Connecting AP-S Leaderships, Local Chapters, and Technical experts with Local Community Leaders and Volunteers to ensure sustainability of funded projects. Attend a conference and spread the word about COPE projects – communicate lessons learned, potentially identify partners/opportunities for scale
5. Scale up AP-S COPE Mission by Collaboration and Engagement with SIGHT, HAC, ISV, UN, UNESCO, and WHO; “Opportunity for sharing Antenna and Propagation Field for Humanitarian Applications”

TASK FORCE - Sharing Best Practices in STEM Education

Task Force for spreading STEM Education

- **Task Force 1**: In Europe: Andriulli, Pichot, and Monebhurrun, Claire Migliaccio (Led by Christian Pichot)
- **Task Force 2**: In North America: David Jackson, Niru Neha, Jose Schutt-Aine, Karl Warnick, and Charlotte Blair (Led by David Jackson)
- **Task Force 3**: In Asia: Meisong Tong, David Z. Chen, Shinichiro Ohnuki, Reyhan Bakhtur, Antenna Wu, and Shanker Balasubramanian (Led by Reyhan Bakhtur)
- **Task Force 4**: In Africa and Latin America: Essaaidi, Felix, Weverton, Alexandre, Lorena, Andres, and Francisco (Lead by Mohammed Essaaidi)

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The COPE website has been functional and regularly updated by Jose Schutt-Aine. Please visit http://aps-cope.org Committee On Promoting Equality (COPE)

- A list of the COPE Corner Columns published in the IEEE AP-S Magazine during 2021-2025 can be found here and are also found on the COPE website:

- COPE: Committee on Promoting Equality [Cope Corner]
- COPE: Making Progress While Facing Challenges [Cope Corner]
- The United Nations Envisions Sustainable Development Goals [Cope Corner]
- Addressing Humanitarian Goals [Cope Corner]
- Introducing the COPE Website [Cope Corner]
- Committee on Promoting Equality Elevated to Permanent Status [Cope Corner]
- COPE Projects [Cope Corner]
- Our Flagship Conference and SHE in ECE [Cope Corner]
- Sustaining Our Mission to Support Humanitarian Activities [Cope Corner]

IEEE AP-S COPE Co-Sponsored R1-R10 Activities

Over 50 projects were supported in 2024; a few are presented here.

Receiving the 2025 COPE Project request through Chapters !!!

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Funding for COPE Activities Around the World

Funding Opportunities:

- IEEE SIGHT: Up to $3000
- IEEE HTB: Up to $5,000
- AP/MTT SIGHT: Up to $3000
- AP-S COPE: $500 to all Chapters
- AP-S COPE Special Project: Up to $3000
- IEEE Ulrich L. Rohde AP-S Humanitarian Field Project Awards: Up to $10,000
- IEEE AP-S EPICS: Up to $6000

Proposals & Requests

- Financial Request Form for AP-S COPE Projects
- IEEE AP-S COPE - Special Project Funding Request Form
- AP-S Special Project Request Form - MS Word
- AP-S Special Project Request Form - PDF
- APS COPE Project Budget Template
- COPE Proposal Guidelines
- COPE Committee Charter

Examples of COPE Events – On COPE Website

- STEM Workshop - Hyderabad Section
- APS-COPE Workshop Report - 12/2/23
- APS-COPE Workshop Report - 12/18/23
- APS-COPE Workshop Report - 9/23/23
- APS-COPE K12 Engineering Outreach program in Central Ohio
- COPE Committee Meeting - 3/31/23
- Cope activities at Amrutvahini College of Engineering
- Presentation on IEEE NNJ Girl Scout STEM volunteer program
- Slides from COPE Presentation at IEEE DTMES

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2024 AP-S COPE/Chapter Funding Support: Total 50 (IEEE R1-R10)

1..Brasil Northeast AP-S Chapter Funding 2024.docx
2.Coloumbus Chapter AP-MTT Jt. Chapter Funding 2024.docx
3. Dallas AP-MTT Jt. Student Branch Chapter Funding 2024.doc
4.France AP-S Chapter Funding 2024.docx
5.Houston AP-MTT-ED Jt. Chapter Funding 2024.docx
6. Indonesia AP-MTT Jt. Chapter Funding 2024.docx
7.Islamabad AP-MTT-EMC-CAS Jt. Chapter Funding 2024.docx
8. Kenya AP-CIS-VTS Jt. Chapter Funding 2024.docx
9. Kenya AP Student Branch Chapter Funding 2024.docx
10.Lativa AP-MTT-COM S Jt. Chapter Anual Support 2024.doc
11.Long Island AP-S Chapter Funding 2024.docx
12.Lithuania AP-ED-MTT Jt. Chapter Anual Support 2024.docx
13.Macau AP-MTTD Jt. Chapter Funding 2024.docx
14.Malaysia AP-MTT-EMC Jt. Chapter Funding 2024.docx
15.Nagoya AP-S Chapter Funding 2024.docx
16.North Italy AP-MTT-ED Jt. Chapter Funding 2024.docx
17.North Jersey AP-MTT Jt. Chapter Funding 2024.docx
18.Nothern Canada AP-S Chapter Funding 2024.docx
19.Orlando AP-MTT Jt. Chapter Funding 2024.docx
20.Romania AP-S Chapter Funding 2024.docx
21. Seoul AP-S Chapter Funding 2024.docx
22.Shanghai AP-S Chapter Funding 2024.docx
23.Shenzhen Beijing AP-S Chapter Funding 2024.docx
24. South Africa AP-MTT-EMC Jt. Chapter Funding 2024.docx
25. Southern Italy AP-MTT Jt. Chapter Funding 2024.docx
26.Tongi AP-S SBC Funding 2024.docx
27.Turkey Istanbul AP-S Chapter Funding 2024.docx
28.Turkey AP-MTT-EMC-ED Jt Chapter Funding 2024.docx
29.Bordeauz AP-S SBC Chapter Funding 2024.docx
30.Acropolis Indore AP-S SBC Funding 2024.docx
31.AVCOE Sangamner AP-S SBC Funding 2024.docx
32.Bangalore AP-MTT Jt Chapter Funding 2024.doc.docx
33..Bangalore AP-MTT Jt SBC Funding 2024.doc.docx
34.Hyderabad AP-MTT-EMC Jt Chapter Funding 2024.docx
35.IIST Kerala AP-S SBC Funding 2024.docx
36. IIT BHU AP-S SBC Funding 2024.docx
37.IIT Indore MP Section AP-S SBC Funding 2024.docx
38. IIT-Kanpur AP-S SBC Funding 2024.docx
39..IIT Kharagpur AP-MTT Jt SBC Funding 2024.docx
40..IIT Jammu AP-S SBC Funding 2024.docx
41..IIT Palakkad AP-S SBC Funding 2024.docx
42.IIT Patna AP-S SBC Funding 2024.docx
43. Delhi Section-Rajasthan Subsection AP-S Funding 2024.docx
44..Kolkata AP-MTT Jt Chapter Funding 2024.docx
45.Kolkata AP-S SBC Funding 2024.docx
46..MP Section AP-S Chapter Funding 2024.docx
47..MNNIT Alahabad AP-S SBC Funding 2024.docx
48.Uttar Pradesh AP-S Chapter Funding 2024.docx
49.Pune AP-MTT-EMC Chapter Funding 2024.docx
50.VFSTR AP-S SBC Funding 2024.docx

IEEE AP-S COPE/SIGHT/MGA/EPICS Co-Sponsored Activities in Region 1-6 (USA)

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MONTCLAIR STATE UNIVERSITY | School of Computing

March 2025

MENU

SEARCH

News and Announcements

AP-S COPE Collaboration with Montclair University

IEEE AP-S

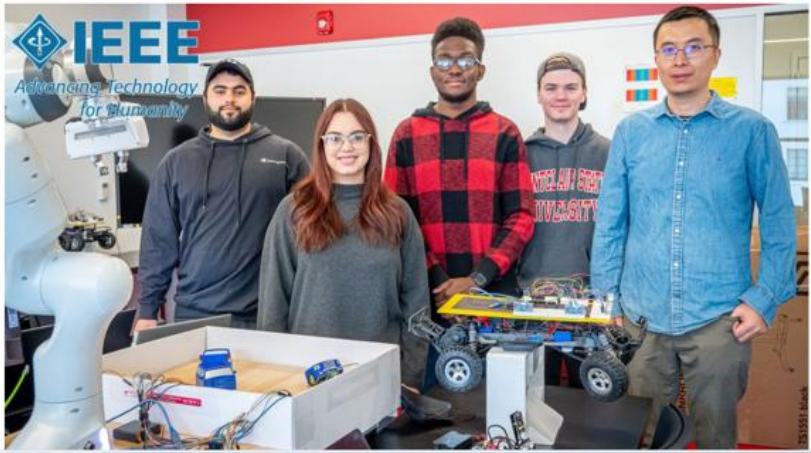
Antennas and Propagation Society

February 17, 2025

IEEE NJ Section-Student Membership Initiatives

IEEE North Jersey Section and IEEE AP Society will offer membership fee compensation for Montclair Students

Posted in: Opportunities https://www.montclair.edu/school-of-computing/2025/02/17/ieee-nj-section-student-membership-initiatives/



2024 IEEE APS-COPE supported K12 Engineering Outreach program in Central Ohio - A Report by Niru Nahar

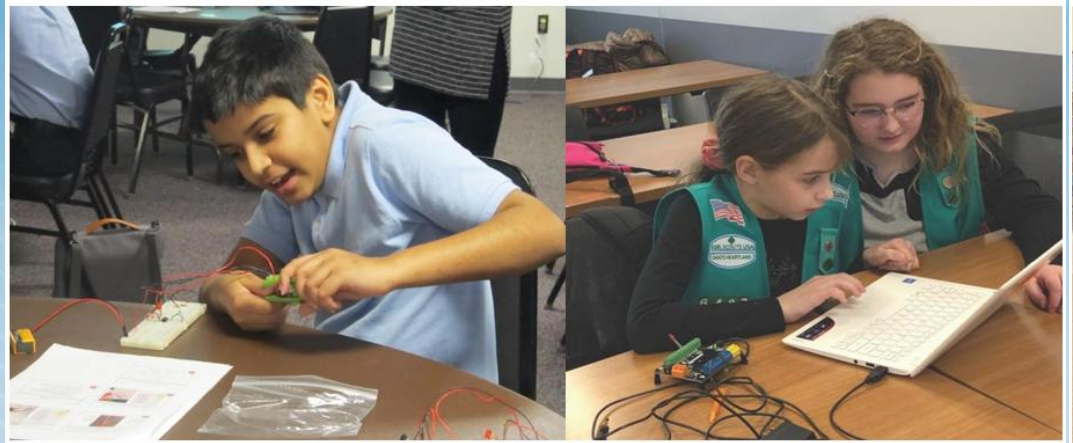


Figure 1. Left: *A sixth grader at St Andrew School in Upper Arlington tests the heart rate monitor he just built. There is an IR LED in the potato-chip clip measuring the hemoglobin in his finger. The circuit blinks an LED with his pulse.*
Right: *A Girl Scout troop (5th and 6th grade) from Hilliard learned to program a microcontroller to run through all possible combinations to an electronic safe. Once it's working, they hack into an actual safe to liberate some candy. On a different visit, they built a burglar alarm, so now they are on both sides of the law.*

Figure 2. Left: *Preschoolers build Cartesian divers (submarines) at the Schoenbaum family center in Weinland Park. When they squeeze the bottle, the "diver" descends, and when they release it, it floats again. Who doesn't love playing with water?*
Right: *Kids made "Magic Wands" that light up at The Works Science Museum in Licking County. This girl is at the very first step, where she figures out how to light up an LED with just a coin battery. Later in the hour, she will add a wand (Popsicle stick with a gold star attached), some wires, and a switch made from a paper clip.*

Demand for the K12 Engineering Outreach program has increased yearly; last year was no exception. We brought hands-on engineering projects to 6,789 kids in schools, libraries, and after-school programs in central Ohio in 2023, up from 6,079 in 2022 (13%). Each project costs between $1 and $2 per kid, and it is SUPER essential for them (mainly in underserved neighborhoods) to keep whatever "it" is, be it a motor, a flashlight, or a speaker. That's always the first thing they ask, "Do I get to keep it?" even before they know what "it" is. Funding currently comes mainly from Ohio State University alumni donations, but that money has been exhausted given the continually increasing number of invitations we get. Last year,

APS-COPE provided $500 for LEDs, batteries, magnets, and wire, primarily for the K12 kids' hands-on experiments, as shown below. Over 90% of the kids served are underprivileged, usually VERY underprivileged. With privileged kids, they are more accustomed to doing things with their hands, so there is more time to take pictures. However, in most under-served venues, the volunteers never get a chance to take photos because they are too busy helping kids.

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AP-S COPE and IEEE North Jersey: Neutrodyne Circuit IEEE Milestone Dedication Ceremony

The IEEE North Jersey Section is extremely proud to dedicate the new IEEE Neutrodyne Circuit Milestone. The Neutrodyne Circuit represents a critical development in the history of electronic circuits, known for its innovative design that minimized interference and improved the performance of radio receivers. It was invented in 1922 by Professor Louis Alan Hazeltine on the Stevens Institute of Technology campus. This milestone underscores the importance of technology that is both forward-thinking and grounded in sustainable practices

The event was held on 19 October 2024, from 12:00 to 2:00 PM at the Corcoran Room, The Gateway Academic Center (North), Stevens Institute of Technology, Hoboken, New Jersey.

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AP-S COPE and IEEE North Jersey Section : Cosponsor RCA Event

2024 Technical Symposium and Awards Banquet

–Nov 23, 2024 at Westin, Times Square, New York

IEEE R1:The Terra North Jersey STEM Fair - TNJSF 2024

Birds-eye view of the students and their project displays

The Team of judges deliberating on the winners Judges (EN, BE) standing in the above picture: from left: Jay Morreale, David Kerr, Dr. Lawrence O'Gorman, Prof. Durga Misra, Dr. Anisha Apte, Leslie Dempsey-Marchese, Dr. Boyd Mathews, Claire Kerr, Chitra Venkatraman, Craig Polk, and Ajay Poddar

Judges (CS) standing in the picture: from left:
Jesse Perron, Maxim Lyons, Amaar Rehman, Chitra, Venkatraman, Benjamin Cheung, Julia Rodano, Poonam Gupta, Lakshmi Umarale, and Akhil Khunger

IEEE

R1-The Terra North Jersey STEM Fair
TNJSF

A team of judges from our IEEE North Jersey Section selected the following students as the recipients of the IEEE Young Engineer Award. The awards were distributed by visiting the schools during the various Science Fairs at the respective schools and the IEEE Headquarters in Piscataway, NJ

IEEE NJ Young Engineer Award

IEEE NJ section sponsors awards for projects in Engineering, Biomedical Engineering, and Computer Science that demonstrate the use of sound engineering principles.

***IEEE NJ Section Young Engineer Award* –**
Co-Sponsored by IEEE AP-S COPE

IEEE NJ Section Young Engineer Award

Cash awards & Certificate of achievement were distributed at local school events and some at the IEEE Headquarters, Piscataway, NJ

BE.02	Mayank Deoras Karthik Thallam	South Brunswick High School
CS.02	Divya Krishna	Edison High School
CS.06	Twisha Patel Gauri Kshettry	Edison High School
EN.03	Michael Xu	Delbarton School
EN.12	Samhita Pokkunuri	Old Bridge High School

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AP-S COPE sponsored: Tera NJ STEM Fair March 22-23, 2025

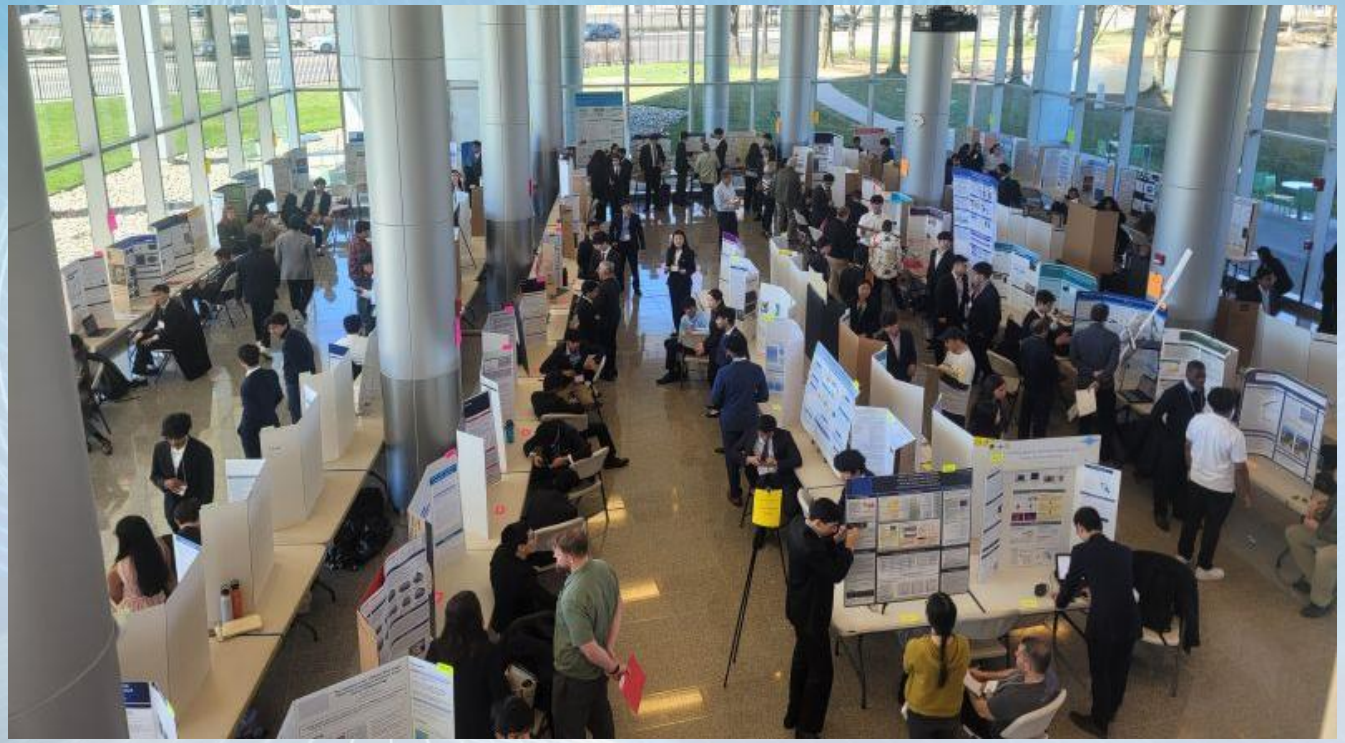

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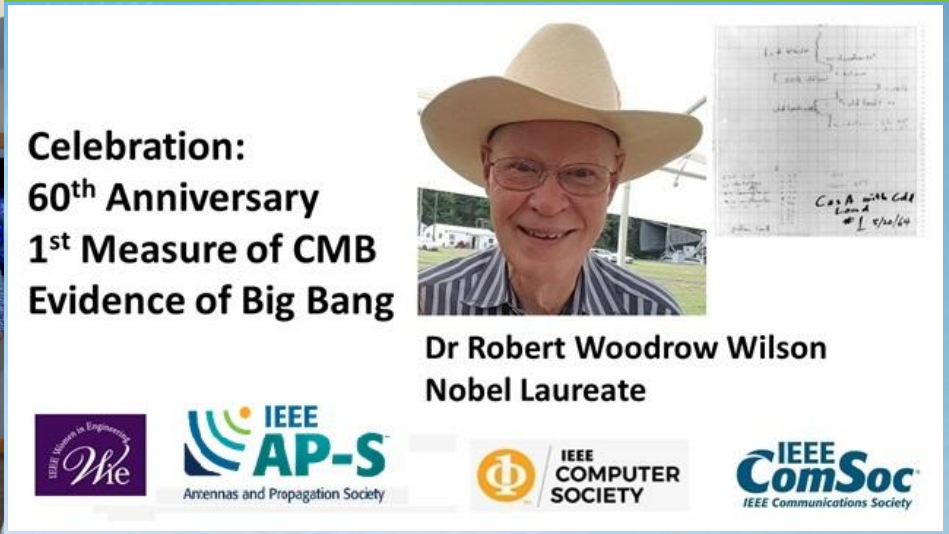
Figure: IEEE AP-S event at the AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave Middletown, New Jersey, May 20, 2024; Dr. Robert Wilson (Fifth from left), along with his wife (Sixth from left), the IEEE Region-1 and IEEE AP-S Members, RCA, and AT&T Bell Labs dignitaries. May 20, 2024

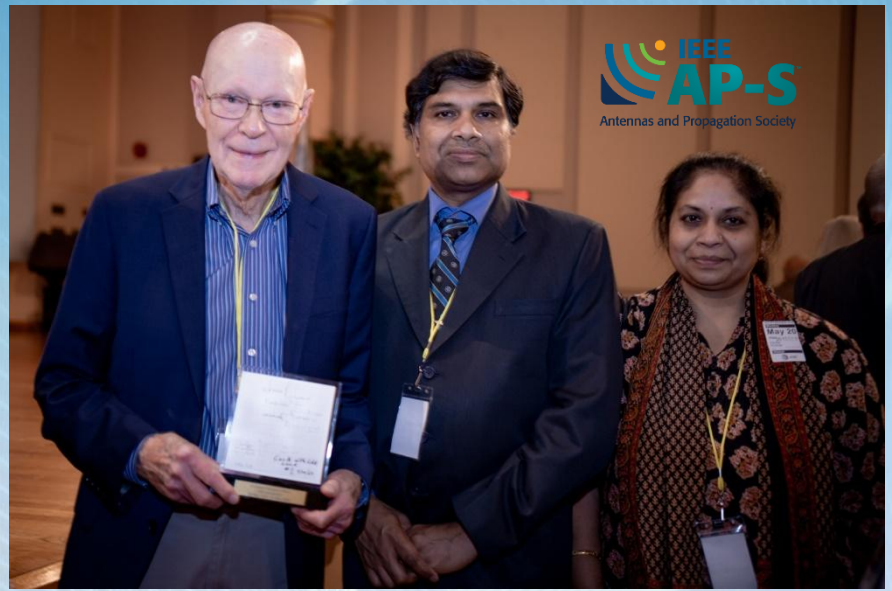


"ANTENNAS AND PROPAGATION SOCIETY, COMMUNICATION SOCIETY, COMPUTER SOCIETY, AND IEEE REGION 1" Cosponsored the Event on 20 May -- 60th Anniversary 1st Measure of Cosmic Microwave Background Radiation

Robert Woodrow Wilson - Biographical (nobelprize.org)

The Antenna and Propagation Society Chapter Activity Committee, Communication Society, Computer Society, and IEEE Region 1 co-sponsored an event on May 20th to celebrate the 60th anniversary of the first measurement of Cosmic Microwave Background Radiation.

Biography of Robert Woodrow Wilson (nobelprize.org)



Picture: From left, Dr. Robert Wilson, Nobel Laurette, holding the specially made plaque showing the date of the discovery of the **1st Measure of Cosmic Microwave Background Radiation,** made on May 20th, 1964, Dr. Ajay Poddar, Chair IEEE AP-S Chapter Activity Committee, and Kavita Poddar, at the AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave Middletown New Jersey, May 20, 2024.

Figure: IEEE AP-S STEM event at the auditorium where Dr. Robert Wilson, Nobel Laurette, addressed the attendees and was awarded a plaque to celebrate the 60th anniversary of the **1st Measure of Cosmic Microwave Background Radiation, May 20, 2024,** at the AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave Middletown New Jersey

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Figure: AP-S STEM Event, Dr. Robert Wilson, Nobel Laureate (seen in the middle at the end of the table), Interacted with Dr. Ajay Poddar, Chair IEEE AP-S CAC, and students during the event held at AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave Middletown, New Jersey, on May 20, 2024

Dr. Robert Woodrow Wilson, Nobel Laureate, along with the community, commemorated the 60th anniversary of the initial measurement of the Cosmic Microwave Background Radiation, a pivotal discovery regarding the Big Bang origins of the universe, at the AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave, Middletown, New Jersey.

STEM students had a unique opportunity to attend a luncheon where they could meet and interact with leaders and luminaries, igniting their passion for future scientific discoveries. A STEM activity offered a chance to view historical recordings of scientific inventions at Bell Lab and engage in meet-and-greet sessions.

From Right, Dr. Peter Vetter, President of Bell Labs Core Research at *Nokia, Murry Hill, NJ;* Dr. Robert Wilson, Nobel Laurette; Dr. Ajay Poddar, Chair IEEE AP-S Chapter Activity Committee; Howard Rosen, RCA (Radio Club of America), Bala Prasanna, IEEE R1 Director, and wife of Dr. Robert Wilson, at the AT&T Labs Science and Technology Innovation Center & Museum, 200 S Laurel Ave Middletown New Jersey, May 20, 2024, at the celebration event of the 60th Anniversary of the 1st Measure of Cosmic Microwave Background Radiation

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Celebrating the 62nd anniversary of the Telstar launch with Dr. Morimi Iwama

IEEE Region 1 in collaboration with the AT&T Science and Technology Innovation Center and Museum, Holmdel, NJ

Top Right Picture: From Right: Dr. Timothy Lee, Dr. Peter Vetter, Dr. Iwama, Dr. Katherine Grace August, Dr. Midori Iwama, and Dr. Peter Wolniansky
Dr. Iwama was accompanied by his wife, Midori Iwama, and one of his daughters at the July 10th event.

On 10 July 2024, IEEE Region 1 organized a celebration of the 62nd anniversary of the Telstar launch with Dr. Morimi Iwama. Invited speakers included Irwin Gerszberg of AT&T Labs, Peter Vetter of Nokia Bell Labs, Tim Lee, IEEE-USA President-Elect, and Margaret J Lyons, P.E., P.M.P. Thank you to Kit August and the local section for organizing this special event at the AT&T Science and Technology Innovation Center and Museum. Telstar 1 launched on top of a Thor-Delta rocket on July 10, 1962. It successfully relayed through space the first television pictures, telephone calls, and telegraph images and provided the first live transatlantic television feed. Six ground stations were built to communicate with Telstar, one each in the US, France, the UK, Canada, West Germany, and Italy. The American ground station—built by Bell Labs—was Andover Earth Station in Andover, Maine. https://en.m.wikipedia.org/wiki/Telstar

Morimi Iwama and Jan Norton of Bell Laboratories were in charge of designing and building A-E mechanisms that steered the large horizontal conical horn antenna with a parabolic reflector at its mouth that re-directed the beam for satellite tracking. This particular design had very low sidelobes and thus made very low receiving system noise temperatures possible.

Dr. Iwama has always been a tough leader. He is known to have bridged the divide in culture and language around the globe. From his very early days, Dr. Iwama was engaged, speaking, and publishing on these issues. His contributions should be recognized as an inspiration to future generations who dedicate their lives to Advancing Technology to Benefit Humanity.

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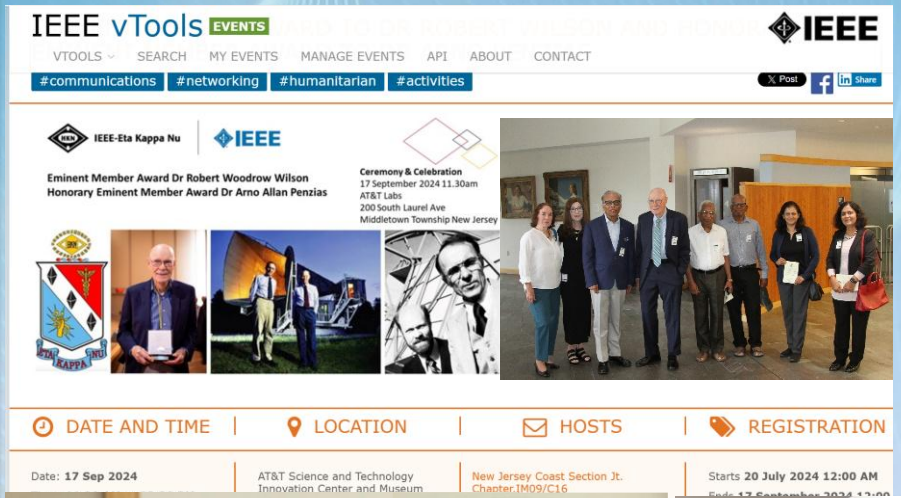
IEEE HKN AP/MTT, LM, SIGHT, IM, C JOINT EVENT at BELL LABS NJ



HKN Eminent Member for Dr Robert Woodrow Wilson and HKN Honorary Eminent Member Ceremony & Celebration on 17 September 2024 at 11.30 am at AT&T Labs Science and Technology Innovation Center and Museum 200 South Laurel Ave Middletown New Jersey; A Day at the Museum with tours by Melissa Knoll AT&T Historian; Lunch with Leaders & Luminaries with Dr Robert Woodrow Wilson and many others; Ceremony and Presentations

IEEE AP-S
Antennas and Propagation Society

Co-sponsored by North Jersey Section Jt Chapter, AP/MTT COPE/SIGHT, Princeton/Central Jersey Section Jt. Chap, AP/ED/MTT, North Jersey Section Chapter PHO, & Affinity Group WIE

May 03, 2024, 06:30 PM to 08:00 PM - Towards a Risk-Free Training Future: Personalized Training Simulation with AI-ML, AR/VR, Gamification, Metaverse, Cloud & IoT: vTools Events (ieee.org)

Brief Agenda: High-risk and heavy motor industries, educational institutes, finance, and underground drilling industries can modernize their training, simulation, and advertisement practices by integrating AR/VR, metaverse, AI, gamification, IoT, Web3, and cloud technologies. AR/VR can overlay real-time data onto machinery, VR can offer realistic training scenarios, metaverse can create virtual training spaces, AI can tailor training programs, gamification can increase engagement, IoT can collect real-time data, Web3 can enable decentralized training platforms, and cloud can provide scalable infrastructure. These technologies lead to safer operations, more efficient workflows, and enhanced learning experiences.

Attendees enjoyed a demo of the technology at the end of the talk.

Location: Rutgers University ECE 240, 94 Brett Rd, 604 Bartholomew Road, Piscataway, NJ 08854

Speaker: Vishal Kumar, CTO | Co-Founder—Ocean2Sand LLC, Chief Software Architect | Product Manager | Research Scientist—Digital Control Inc., Founder—MetaTel | Poddar Apps and Engineering Manager | Chief Engineer—Synechron

Fig: Top left : Speaker with the demo headset, Top Right: Speaker & Attendees. Bottom: Speaker receiving the plaque from AP-S CAC Dr. Ajay Poddar (in the center) and other attendees, including AP-S AdCom member Dr. Anisha Apte

Co-sponsored by North Jersey Section AP/MTT COPE/SIGHT, Computer, Photonics, WIE, and SP chapters

May 13, 2024, 06:30 PM to 08:30 PM - Revolutionizing Technical Education: Personalized Training and Simulation with AI-ML, AR/VR/MR, Gamification, Metaverse, Cloud & IoT

Brief Agenda: AR/VR/MR platforms can replicate real-world environments where ground radar systems operate. This includes simulating terrain, weather conditions, and scenarios where ground radar is used, such as air traffic control, weather monitoring, or military applications. Virtual reality can transport users to space exploration missions, allowing them to experience the challenges and excitement of space travel.

With a live demo of the technology towards the end of the talk, the speaker kept the audience immersed in the experience of Virtual/Augmented Reality.

IEEE North Jersey Section AP/MTT, Computer, Photonics, WIE, and SP chapters Co-sponsored the event. The picture shows the various Chapter Chairs and some of the attendees.

Location: Fairleigh Dickinson University (FDU) MUS 206, 1000 River Rd, Teaneck, NJ 07666

Speaker: Vishal Kumar, CTO | Co-Founder—Ocean2Sand LLC, Chief Software Architect | Product Manager | Research Scientist—Digital Control Inc., Founder—MetaTel | Poddar Apps and Engineering Manager | Chief Engineer—Synechron

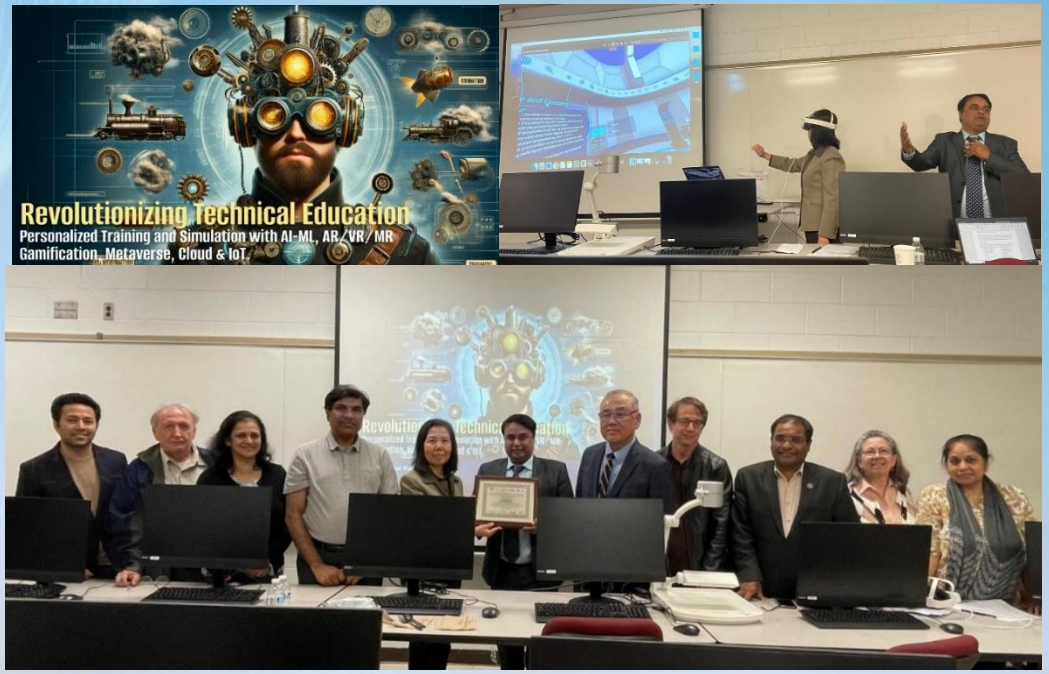


Fig: Top Right: Speaker giving a live demo to the attendees,
Bottom: From Left: Rakesh Singh, Ionel Bajescu, Dr. Anisha Apte, Dr. Ajay Poddar, Prof. Hong Zhao, Vishal Kumar, Dr. Alfredo Tan, Prof. Manfred Minimair, Prof. Avi Vatsa, Joe Bajescu, & Kavita Poddar

Co-sponsored by North Jersey Section Jt. Chapters AP/MTT COPE/SIGHT, CAS/ED, VTS, PHO, North Jersey Section SIGHT, Affinity Group, WIE,

June 13, 2024, 06:00 PM to 08:30 PM

Talk 1: Transforming Technical Education: Practical Uses of AI, MR, Gamification, cloud and IoT for Personalized and Scalable Learning

Brief Agenda: Cutting-edge technologies like AI-ML, AR/VR/MR, gamification, and the metaverse can revolutionize technical education through personalized training and simulation.

Speaker 1: Vishal Kumar, CTO | Co-Founder—Ocean2Sand LLC, Chief Software Architect | Product Manager | Research Scientist—Digital Control Inc., Founder—MetaTel | Poddar Apps and Engineering Manager | Chief Engineer—Synechron

Talk 2: CASE: Traffic and energy load balancing in cooperative dual-powered green cellular networks: vTools Events (ieee.org)

Brief Agenda: Power consumption in cellular wireless communication base stations is a significant cost factor for service providers. Further, it significantly adds to the global carbon footprint. To this end, ambient-powered wireless base stations are being explored. In this presentation,

Speaker:2: Prof. Swades De, Professor with the Department of Electrical Engineering and an Institute Chair Professor at IIT Delhi, India

Fig: Top - Speakers and attendees during the presentations
Bottom: From Left: Ionel Bajescu, Swades De, Vishal Kumar, Shahin Angizi, Durga Misra, Ajay Poddar, Kavita Poddar, Anisha Apte

Location: NJIT ECE202, 154 Summit Street, Newark, NJ 07102

Co-sponsored by North Jersey Section Jt. Chapters AP/MTT, CAS/ED, VTS, PHO, North Jersey Section SIGHT, Affinity Group, WIE,

June 13, 2024, 06:00 PM to 08:30 PM

Talk 1: Singularity Treatment Techniques for Solving Electromagnetic Integral Equations

Brief Agenda: Electromagnetic (EM) problems can be described by integral equation approaches, which include surface integral equations (SIEs), volume integral equations (VIEs), and volume-surface integral equations (VSIEs). In this talk, we will present some robust singularity treatment techniques we developed for those singular integrals and provide numerical examples to demonstrate their applications for solving real-world problems.

Speaker:1: Prof. Meisong Tong, Distinguished Professor and Head of the Department of Electronic Science and Technology, as well as Vice Dean of the College of Microelectronics at Tongji University in Shanghai, China

Talk 2: The Future of Education: Integrating AI, ML, VR, MR, Gamification, and Cloud for Personalized, Scalable, and Cost-Effective Education.

Brief Agenda: Integrating AI, ML, VR, MR, gamification, and cloud computing in education offers a comprehensive approach to providing personalized, scalable, and cost-effective learning experiences.,

Speaker 2: Vishal Kumar, CTO | Co-Founder—Ocean2Sand LLC, Chief Software Architect | Product Manager | Research Scientist—Digital Control Inc., Founder—MetaTel | Poddar Apps and Engineering Manager | Chief Engineer—Synechron

Fig: Top - Speakers and attendees during the presentations
Bottom: From Left: Student members, attendees from 3rd – Meisong Tong, Weitian Wang, Vishal Kumar, Ajay Poddar, Anisha Apte, Ionel Bajescu, Shambhavi Vats, Amrita Poddar, Manjusha Sapre

Location: Montclair State University, Center for Environmental and Life Sciences (CELS), Room: CELS 120 NJ 07043,

IS Project: SHE in ECE

North Jersey Section and NJIT's ECE Department are hosting a FREE One-Day Summer Camp for Female High School Students (Grades 8-12) on July 02, 2024. **(200 plus students expected)**

About this Inter-Society Event

More than 100 girls entering 9th to 12th grades from the local high schools attended the event, including several minority students. Prof. Durga Misra, Chapter Chair of the EDS/CASS Chapter of the North Jersey Section, welcomed the students. He emphasized the financial sponsorship of the IEEE Electron Device Society, IEEE Circuit and Systems Society, and the IEEE Antennas and Propagation Society.

Volunteers and Panelists are members of AP, MTT, ED, CS, CAS, SP, AES, PHO, EMC, SIT, NC, RA, VT, TMC, SIGHT and HAC.

ED-S funded $6,700
AP-S Funded $3,000

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IEEE vTools EVENTS — **IEEE R1 Inter-Society Projects** — IEEE

VTOOLS | SEARCH | MY EVENTS | MANAGE EVENTS | API | ABOUT | CONTACT — Welcome, Anisha Apte

SHE in ECE: July 02, 2024

SUMMER CAMP FOR FEMALE MIDDLE SCHOOL AND HIGH SCHOOL STUDENTS: SHE IN ECE

#STEM #Electrical #Engineering #Computer #WIE

X Post | Share

Manage this Event

https://she.njit.edu/

"IEEE Electron Device Society and Circuit and Systems Society One-Day Summer Camp for Female Middle School High School Students: SHE in ECE"

IEEE EDS/CASS sponsored "One-Day Summer Camp for Female High School Students" to join engineering especially in electrical engineering and computer engineering. SHE@IEEE is **S**oaring **H**igh-powered **E**xcellence in Electrical and Computer Engineering (ECE): SHE in ECE. The participants will be middle school and high school students entering 7th to 12th grades in the IEEE North Jersey Section and the surrounding community.

Participants Did:

- Learn about various IEEE activities.
- Students will meet current and present female undergraduate and graduate students in ECE program.
- The student will visit the ECE Research laboratories related to robotics, electronics, and communication/network research.
- Female faculty members will address the students describing their career growth.
- Students will be addressed by female industry leaders in ECE disciplines with ECE degrees.
- Former female ECE students who are working in Industry will address
- Students will discover the current trends and the future Electron Device technology by interacting with the female guest speakers.
- ECE Program advisors will also present the academic activities and requirements.
- Students will carry out a few hands-on activities that will include circuits boards and

Participants are encouraged to Register Here

SHE in ECE: Soaring high-powered Excellence in Electrical & Computer Engineering

DATE AND TIME | LOCATION | HOSTS | REGISTRATION

Date: **02 Jul 2024**

Time: **08:15 AM to 04:30 PM**

All times are (UTC-04:00) Eastern Time (US & Canada)

Add Event to Calendar
iCal
Google Calendar

154 Summit Street, Newark, NJ 07102

Newark, New Jersey

United States 07102

Building: NJIT Campus Center

Room Number: ATRIUM

Click here for Map

North Jersey Section Jt Chapter,CAS04/ED15

North Jersey Section

North Jersey Section SIGHT

North Jersey Section Jt Chapter,AP03/MTT17

North Jersey Section Affinity Group,WIE

Link to External Registration

Ajay Poddar
Chair - IEEE HAC Inter-Society

IEEE
Advancing Technology for Humanity

IEEE AP-S
Antennas and Propagation Society

Electron Devices Society

CAS
IEEE CIRCUITS AND SYSTEMS SOCIETY

IEEE Women in Engineering WIE

IEEE
North Jersey Section

Co-sponsored by North Jersey Section Jt Chapters, CAS04/ED15, AP03/MTT17, PHO36, North Jersey Section SIGHT, Affinity Group WIE, and the North Jersey Section

Speakers – Faculty & Industry Panel

Speakers will be female University Professors and female Industry Leaders.

2024 SHE in ECE
(View Our Itinerary for the day)
Meet Our 2024 Panelists

Title: ***One-Day Summer Camp for Female High School Students: SHE in ECE***

Date: July 02, 2024, 08:15 AM to 04:30 PM

Brief Agenda: One-Day Summer Camp for Female Middle School and High School Students" to join engineering, especially electrical and computer engineering. SHE@IEEE is Soaring High-powered Excellence in Electrical and Computer Engineering (ECE): SHE in ECE.

Location: 154 Summit Street, Newark, NJ 07102

Marjorie Perry (Opening Remarks)	Lucie Tchoussi (Panel Moderator)
Carol Mendez Benitez	Ms. Chitra Venkatraman
Jessica Harris	Dr. Charlotte Blair
Prof. Xuan Liu	Prof. Ratna Raj
Dr. Anisha Apte	

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SHE in ECE @ NJIT USA July 2nd, 2024

- The third annual **one-day** summer camp for female high school and middle school students on the NJIT campus
- The event's focus was on attracting female students to electrical and computer engineering and encouraging them to select engineering as their career.
- The program was organized from 8:30 AM to 3:30 PM.
- The theme was SHE in IEEE and SHE in Electrical and Computer Engineering (ECE). SHE stands for "Soaring High-powered Excellence."

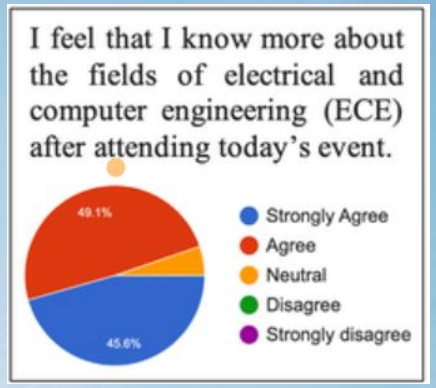
Hands on Activities by the Students - 2024

Prof. Marcos Netto talked about Renewable Energy

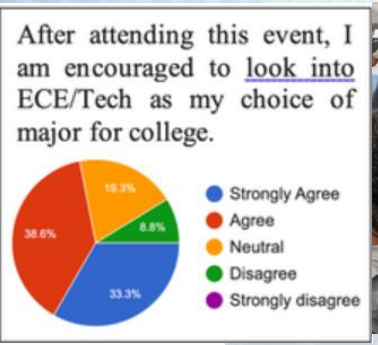
IEEE AP-S Antennas and Propagation Society

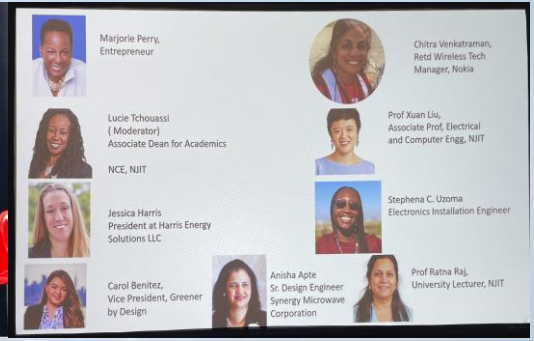
R1 - SHE in ECE @ NJIT USA July 2nd, 2024

More than 80 girls from the local schools in 6th to 12th grades attended the event (For program details)
Welcome - by Prof. Durga Misra, IEEE ED/CAS Chapter Chair of North Jersey Section.
Opening keynote - Ms. Marjorie Perry, CEO and sole principal of MZM Construction
Panel discussion: Women faculty members and industry leaders in an engineering field and WiE leaders of IEEE.
Academic panelists: Ms. Lucie Tchouassi, Associate Dean for Academics, Newark College of Engineering,
Prof. Ratna Raj and Prof. Xuan Liu of the Elect & Comp Eng Department of NJIT.
Industry panelists: Ms. Chitra Venkatraman, retired Telecommunication Engineer from Nokia;
Dr. Anisha Apte, Sr. Design Engineer at Synergy Microwave Corporation and IEEE Region 1 WiE Chair;
Ms. Carol Benitez, Vice President of Operations at Greener by Design;
Ms. Jessica Harris, President at Harris Energy Solutions LLC, and
Ms. Stephena C. Uzoma, Electronics Installation Engineer in the Federal Aviation Administration (FAA).
Panel introduction: Ms. Lucie Tchouassi.



Each panel member went to a round table to talk to the students. A question bowl with many relevant questions where the students were happy to pick a question to ask the panelist led to a very cordial discussion with students and advised them how to think about selecting their career. The panelists told the students to be strong and brave as a female electrical engineer because female engineers make a highly positive impact in new technology development and innovation.





A summary of the IEEE AP/MTT North Jersey Section Chapter's
38th ANNUAL SYMPOSIUM AND MINI-SHOW

On October 9, 2024, the IEEE North Jersey Section APS/MTTS chapter conducted its 38th Annual Symposium and Mini show. The symposium typically consists of about ten talks, each 40 minutes long. Attendance for this event has always been complimentary, along with breakfast, lunch, and afternoon tea/coffee and desserts.

The cost of the event is borne with the support of the business community involved in the industry, which pays to exhibit its products. The IEEE AP-S (Antennas and Propagation) and MTT-S (Microwave Theory and Technology) societies have provided funds for some of the DL (Distinguished Lecturer) speakers.

IEEE AP-S Antennas and Propagation Society

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A summary of the IEEE AP/MTT North Jersey Section Chapter's
38th ANNUAL SYMPOSIUM AND MINI-SHOW

This year's event featured speakers from the international AP/MTT community in India, Turkey, Canada, Colorado, California, and the United Nations. We also had distinguished local speakers, including the IEEE Region-1 Director Bala Prassana, who lauded and recognized the durability of this event over the years. Its modest beginnings with two bookend talks and 6-8 exhibitors have grown to a full day with ten talks and about 40 exhibitors. The attendance for 2024 was around 320.

Time	Topic	Speaker	Title	Affiliation
8:50	Opening Remarks	George Kannell	Technical Chair IEEE MTT/AP	L3Harris
9:00-9:30	Spoof Surface Plasmon Polariton Based Integrated Circuits	Dr. Shiban Koul	IIT Delhi, India IEEE Inter-Society, (AP-MTT-EMC)	Honorary Professor the Indian Institute of Technology
9:30-10:00	Guided Wave Theory: Can eigenvalues be extracted from propagation characteristics, or vice versa?	Dr. Levent Sevgi	Chair IEEE AP-S DL Professor	EMC TURKIYE – ISTANBUL
10:00	BREAKFAST BREAK - MINI SHOW EXHIBITION			
11:00-11:30	Multi-Function Multi-Band Reconfigurable High-Q Filters	Dr. Rafaat Mansoor	MTT-S DL; Professor of Electrical & Computer Engineering	University of Waterloo
11:30-12:00	Noise in Oscillators with Active Inductors	Dr. Ulrich L Rohde	Professor President & Chairman	University of Joint Forces DE, Synergy Microwave
12:00	LUNCH			
1:00-1:30	RF and Sensor Networks for Environmental and Climate Change Efficiency	Dr. David Padi	Business Relationship Manager	The United Nations
1:30 2:00	Indian GNSS Paradigm- A Step towards Self-sustenance- (Atmanirbharata)"	Dr. Surendar Pal	Vice-Chancellor Defense Institute of Adv. Tech Pune, Founder Program Director-ISRO	ISRO, Indian Space Research Organization
2:00 2:30	Simultaneous Transmit & Receive (STAR) for Next Gen Comms 5G & 6G	Dr. Alan Brannon	Sr. Principal Research Associate, Prof. Adjunct	Univerity of Colorado Boulder
2:30	BREAK - MINI SHOW EXHIBITION			
3:00-3:30	Optics in Electronic Warfare	Piotr Zelazny	Systems Engineer	L3Harris
3:30-4:00	Non-Terrestrial Networks: Where 5G and SatCom Converge	Mike McLernon	Principal Technical Marketing Engineer	MathWorks
4:00-4:30	EW Environmental Generation Overview	Bill Kardine	EW BDM	Rohde and Schwarz
5:00	Closing remarks	Kirit Dixit	Chair MTT/AP Symposium	Microcom Sales

Industry Exhibits

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A summary of the IEEE AP/MTT North Jersey Section Chapter's
38th ANNUAL SYMPOSIUM AND MINI-SHOW

IEEE AP-S
Antennas and Propagation Society

Speakers, Organizers, Attendees & Students

IEEE AP-S COPE/SIGHT/MGA/EPICS Co-Sponsored Activities Region-8, Region-9

IEEE AP-S Antennas and Propagation Society

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IEEE AP-S / MTT-S Workshop on Antennas and Microwaves for Sustainable Development held in Tangiers, Morocco on June 4-6, 2023

The IEEE AP-S/MTT-S Morocco Workshop on Antennas, Microwaves, Wireless, and Radar Technologies for Sustainable Development was held in Tangiers, Morocco on June 4-6, 2023. This was jointly co-organized and co-sponsored by IEEE AP-S, IEEE MTT-S, IEEE Morocco AP-S/ MTT-S joint Chapter, and the Moroccan School of Engineering Sciences (EMSI).

This workshop provided a wonderful opportunity for many graduate students, young professionals, and faculty from different higher education institutions in Morocco to explore the amazing applications of antennas, radar, wireless, and microwave technologies for sustainable development through topics as diverse as:

1. Antenna design and optimization for wireless communication and radar systems.
2. Microwaves and millimeter-wave technology for wireless communication and sensing applications.
3. Wireless power transmission and energy harvesting for sustainable energy solutions.
4. Wireless and radar technologies for environmental monitoring and disaster management.
5. Sustainable agriculture and food security through wireless technologies.
6. Smart cities and infrastructure development using wireless communication and sensing technologies.
7. Microwave and radar applications in healthcare.
8. Cubesat technologies and applications

IEEE AP-S Antennas and Propagation Society

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IEEE AP-S / MTT-S Workshop on Antennas and Microwaves for Sustainable Development held in Tangiers, Morocco on June 4-6, 2023

Another important highlight of the workshop program was the special session dedicated to PhD students, which allowed them to showcase their research work and receive feedback from the outstanding speakers and leaders from both IEEE societies who attended it. In addition, a very interesting session was organized by Prof. Yahia Antar and Prof. Jawad Siddiqui that focused on the benefits of and the procedure for establishing an IEEE AP-S Student Chapter and also introduced the IEEE AP-S COPE initiative.

Furthermore, this workshop had an amazing attendance from women graduate students and young professionals.

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LACAP 1st Latin American Conference on Antennas and Propagation.

IEEE LACAP 2024 – Ist Edition @Cartagena, Colombia, Nov 30-Dec 04, 2024

The IEEE AP-S CAC/COPE/SIGHT/MGA meeting during the 1st edition of the LACAP was very well attended. The meeting was a great source of information and motivation to the attendees.

IEEE AP-S Antennas and Propagation Society

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LACAP 1st Latin American Conference on Antennas and Propagation.

NEWs & NOTICE

NOTICE

Chapter Chairs meeting

A Chapter Chairs meeting is scheduled for **December 1st** from 9:30 AM to 3:30 PM

Note: Chapter Chairs will be reimbursed the flight cancellation fees from the Chapter budget because of last-minute LACAP conference venue changes.

Chapter Chair, COPE, and SIGHT Meeting on December 1st

The Chapter Chair, COPE, and SIGHT Meeting is scheduled for December 1st at the **Hotel Hyatt Regency.**

Networking Event for R9 Officers and AP-S Volunteers – Nov 30

A networking event for R9 Chapter Officers and AP-S volunteers will take place on the evening of November 30th from 5:30 p.m. to 7:30 p.m.

Get Endorsed for Senior Member Status at the Chapter Chair Meeting

Senior Member Drive: Nominators and endorsers will be available during the chapter chair meeting to assist IEEE members seeking to elevate to Senior Member status. This endorsement service is complimentary for all LACAP attendees who qualify for senior membership.

Recruit 50 AP-S Members and Earn Travel Grants for 2025 URSI Symposium

IEEE AP-S Membership Drive: R9 AP-S Chapter Officers and AP-S Volunteers who successfully recruit over 50 new AP-S members during LACAP will be awarded travel grants for the 2025 AP-S URSI Symposium in Ottawa.

Thank you to the LACAP 2024 Organizing Committee for accommodating these five events

IEEE AP-S Antennas and Propagation Society

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LACAP 1st Latin American Conference on Antennas and Propagation.

IEEE AP-S Antennas and Propagation Society 75TH Anniversary

LACAP 1st Latin American Conference on Antennas and Propagation.

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IEEE AP-S SIGHT (Special Interest Group of Humanitarian Technology)

Using Technology for Benefit of Humanity: Opportunities, Ideas and Challenges

Organizers:

IEEE AP-S SIGHT, COPE, CAC, MGA and AP-S Colombia Chapter

December 1-4, 2024, Cartagena de Indias, Colombia

POSTER COMPETITION FOR SUSTAINABLE DEVELOPMENT GOALS

∞ **Poster Competition** *(should address the following)*:

- ⇒ **Form a Group to address any one UNSDG issue**
- ⇒ **Which Sustainable Development Goals (SDG) represent area(s) of focus for your group?**
- ⇒ **What is your initial understanding of the needs of the community with which you wish to work?**
- ⇒ **In what possible ways do you imagine addressing the needs using *Antenna and Wireless* technology?**
- ⇒ **How do you plan to engage the local community?**
- ⇒ **Detail the impact you expect to achieve through your group's activities and how it will be measured?**

The contest applies to groups of students located in Colombia

Competition opening date: October 07 2024

Contest end date: November 15 2024

Submission Guidelines: Must be sent in DIN A0 format. File format PDF.

Send to to the email: aps-colombia@ieee.org

Subject of the email "LACAP24 ODS POSTER"

∞ **Poster presentation session** (posters from selected groups will be invited to present during the conference) - Travel and accommodation will be covered up to USD 500 for each group

∞ *All participants are encouraged to become members of the Antennas and Propagation Society* IEEE AP-S

∞ Prizes:

1st place - USD 300 and a certificate
2nd place - USD 200 and a certificate
3rd place - USD 100 and a certificate
All participants will receive a certificate of appreciation

∞ **Discussion panel:**

Discussion panel will cover on the following aspects: IEEE AP-S SIGHT awareness • UN sustainable development goals • Novel ideas and technological solution for humanitarian needs • Emphasize on low-cost wireless engineering technology solutions for susceptible communities

For detailed information, please contact:

Javier Araque General-Chair-LACAP 2024 (jlaraqueq@unal.edu.co)
Francisco Pizarro, General Co-Chair-LACAP 2024 (francisco.pizarro.t@pucv.cl)
Ajay Poddar, AP-S CAC (akpoddar@ieee.org)
Debatosh Guha, Chair, AP-S MGA (dguha@ieee.org)
Anisha Apte, Member, AP-S AdCom and COPE(anisha_apte@ieee.org)
Jawad Y. Siddiqui, Chair, AP-S SIGHT (jys.rpe@gmail.com)

(https://lacap2024.org/)

The IEEE AP-S COPE/SIGHT Poster Session was a tremendous success, with 17 project submissions, with 1 group recipient for the first place award and the 2nd place award jointly awarded to two groups. Also, the 3rd award was jointly received by two groups, while one group was awarded a special mention. The students of the winning teams also received travel grants and accommodation. The overwhelming response was also attributed to the bilingual poster created for this Poster session.

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IEEE AP-S COPE/SIGHT/MGA/EPICS Co-Sponsored Activities Region-10

IEEE AP-S Antennas and Propagation Society

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IEEE AP-S COPE Work in China - Spark the interest of middle school students in learning ECE – A Report by - Junwei Wu

Working with the Department of Information Science and Engineering, Southeast University, China, and also with the state key laboratory of millimeter waves, in a group led by Prof. Tie Jun Cui, and some government initiatives, it is now popular for junior high schools, high schools, and even primary schools in China to organize students to visit universities for study.

During these activities, a popular science report titled "Radio Science and Engineering" to ignite students' interest in studying the ECE major, & popularization of STEM (Science-Technology-Engineering-Mathematics) education, which is in line with the spirit and main purpose of the COPE organization. In 2024, a cumulative attendance of about 2,500 attendance and these efforts received widespread praise.

Sep. 6, 2024, Xian Railway Middle School - about 120 students' audiences.

Nov. 3, 2024, at the Jiangsu Liangfeng Middle School – about 200 student audiences

Nov. 9, 2024 at Xuzhou Xinyuan School – about 100 audience

Nov 2, 2024

Nanjing Yangzi Middle School - about 150 student audiences.

IEEE AP-S Antennas and Propagation Society

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IEEE AP-S COPE Work in China - Spark the interest of middle school students in learning ECE – A Report by - Junwei Wu

The aim of these activities is to enlighten the interest of middle school students in learning electrical and computer engineering, which is an important part of STEM education.

Short lectures for the Middle School students, brief introduction to the principles of wireless broadcasting and related circuits. Students are also given FM/AM kits to encourage them to build small FM/AM radio stations.

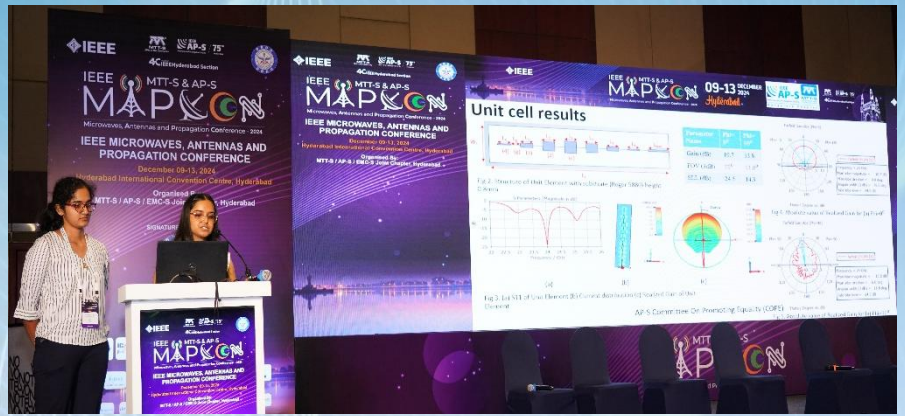
Nov. 16, 2024 at High School of Nanjing Normal University - about 400 student audiences.

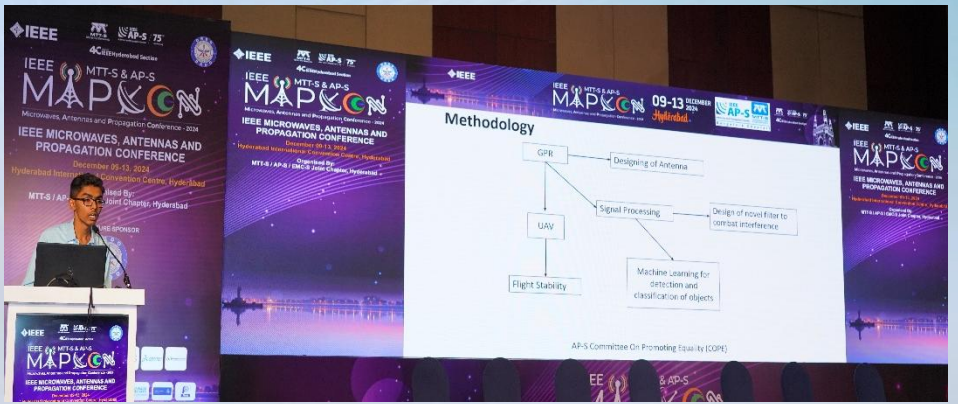
Dec. 1, 2024 at the Qingdao Changjiang Road Middle school - about 350 student audiences

AP-S COPE/SIGHT/Chapter Events, 2024 MAPCON, Hyderabad, Dec 09, 2024

AP-S COPE/SIGHT/Chapter Events, 2024 MAPCON, Hyderabad, Dec 09, 2024

IEEE MAPCON AP-S COPE-SIGHT Student Design Contest Award Finalists





IEEE AP-S Antennas and Propagation Society

AP-S COPE-SIGHT Projects: Participation of 24 undergrad students, among which 4 groups were selected as finalists. These finalists have been offered the opportunity to present their work at the MAPCON in Hyderabad on Dec 9, 2024.

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AP-S COPE/SIGHT/Chapter Events, 2024 MAPCON, Hyderabad, Dec 09, 2024

AP-S COPE ACTIVITY: IEEE PICT Pune – Dec 14, 2024

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Antennas and Propagation Society

IEEE AP-S COPE-Chapter-SIGHT, PICT Pune – Dec 14, 2024

IEEE AP-S
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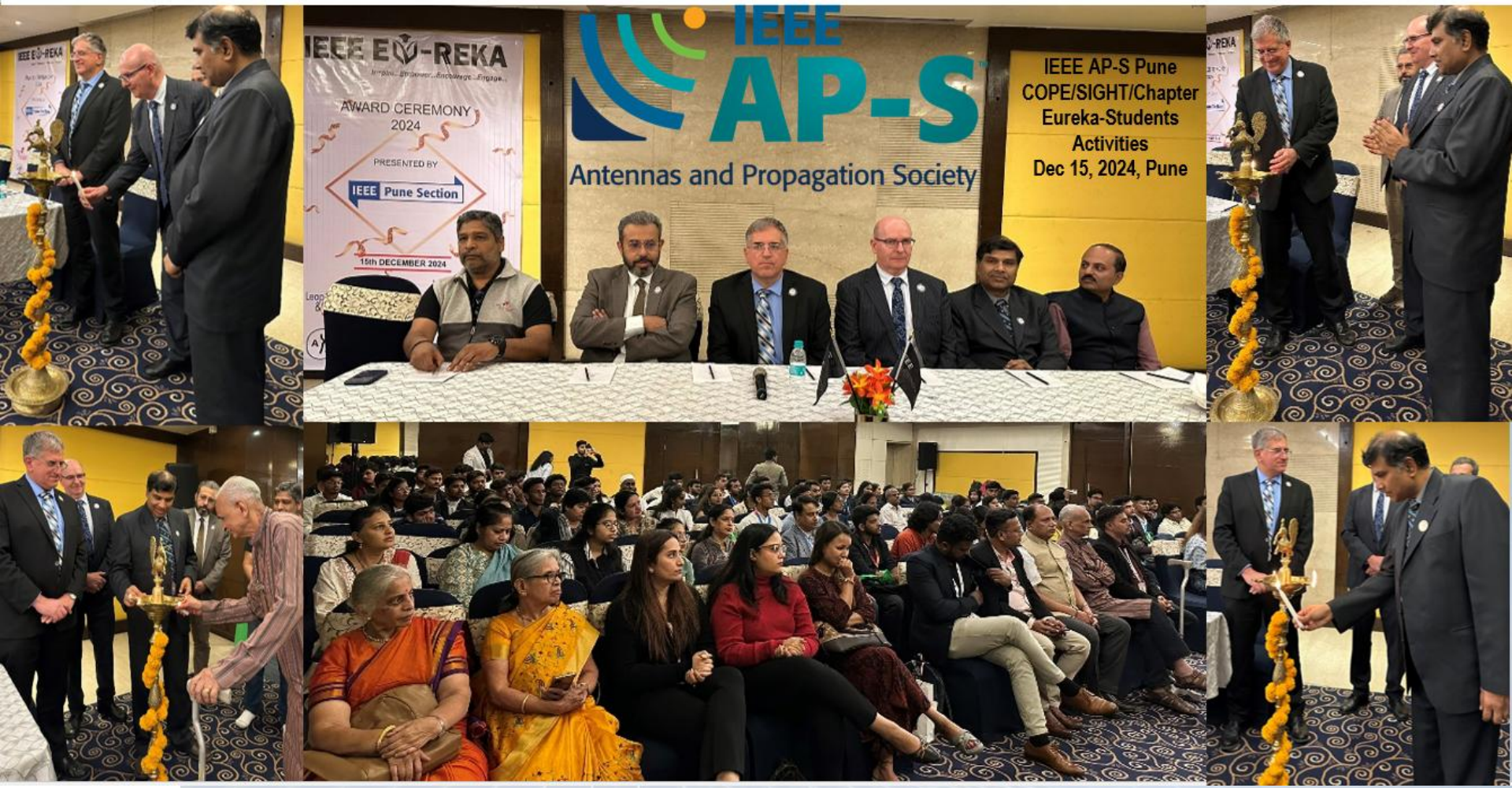
IEEE AP-S Pune COPE/SIGHT/Chapter Events: Eureka, Dec 15, 2024, Pune



IEEE AP-S Pune COPE/SIGHT/Chapter Events: Eureka, Dec 15, 2024, Pune

IEEE AP-S Pune COPE/SIGHT/Chapter Events: Eureka, Dec 15, 2024, Pune

COPE Presentation – AP-S AdCom Meeting, Feb 23, 2025

IEEE AP-S Antennas and Propagation Society

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IEEE AP-S COPE – Prof. Levent Sevgi, March 04, 2025

From ENGINEERING ELECTROMAGNETICS to ELECTROMAGNETIC ENGINEERING: Teaching/Training Next Generations: vTools Events | vTools IEEE

EPICS IN IEEE

Engineering Projects In Community Service

EPICS in IEEE and AP-S COPE Partnership Update

IEEE AP-S Antennas and Propagation Society

IEEE

Team Update: An AIoT-powered Smart Agricultural System for Pests Forecasting and Management

- In February, the team visited the snake-fruit farming location to discuss the project plan with the farmer group community. They are now in Phase 1: prototyping and data training using AI.
- **Prototyping IoT Sensors:** Successfully designed IoT sensor prototypes for real-time weather observation. These prototypes include temperature, humidity, rainfall, and light intensity sensors. Currently, prototypes are being tested and analyzed for LoRa communications.
- **Pest Data Collection:** Collected data on fruit fly pests with the assistance of the snake fruit farming community, which provided weekly fruit fly catch data for labeling purposes.
- **Drone-Based Snake-fruit Field Mapping:** Initiated the collection of snake-fruit field images and collaborated with farmers to map snake-fruit farmlands. We currently map one-third of the snake-fruit land and are in the process of labeling it to train an AI model.
- **AI-Based Climate Data Training:** Successfully trained AI models using supplementary data obtained from open public datasets to predict climate conditions in snake-fruit farming land. The team identified the most effective AI model for this purpose through rigorous analysis.

IEEE AP-S

EPICS IN IEEE
Engineering Projects In Community Service

Team Update: Revitalizing Rural School and Empowering Indigenous Communities - Malaysia

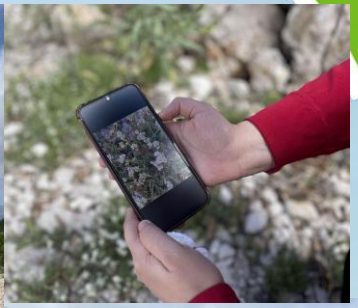
- A collaborative and dynamic meeting was conducted to facilitate recruitment and brainstorming activities for the EPICS in the IEEE project. The entire project was subdivided into Engineering, Software, Design, and Education sections, fostering a vibrant exchange of ideas.
- Over 40 students from various programs and schools were recruited, constituting a diverse talent pool. The gathering cultivated an atmosphere of creativity and innovation, providing a solid foundation for the project's multifaceted components. Participants passionately explored strategies, ensuring a comprehensive approach across distinct dimensions of the project. This meeting marked a pivotal moment, solidifying a dedicated team poised to embark on the EPICS in IEEE journey.
- The UTS delegation, comprising six members, embarked on an engaging site visit to a primary school, accompanied by five school representatives for an EPICS in IEEE project. The focus of the visit centered around UTS's innovative E-BIKE project. The delegates provided a succinct introduction to the project and initiated discussions with the school representatives on its potential implementation within the school premises. The visit involved a thorough exploration of the site and identified optimal locations for placing the E-BIKE prototype. Precise measurements were taken to ensure seamless integration, fostering collaboration between UTS and the primary school for the successful realization of this sustainable initiative.
- Now, all the team members (Engineering, Software, Design, and Education sections) are working independently and effectively led by the STB Chair.

Team Update: Credit based smart garbage disposal bin - India

- As of now, the finished basic design of the bin is with the fixation of the components.
- The team made a detailed study of machine learning.
- Now, the team is working on the algorithms for the garbage specification
- They received their funding and connected with their EPICS in IEEE mentor

Team Update: Mitigating the taxonomic impediment problem of plants using ML and citizen science-Lebanon

- **Desk work:** Students collected a preliminary dataset of plant species images/names from online sources. The plant list is based on the Shouf Biosphere Reserve (SBR) website. It consists of 41 species, each with 50-70 images. The students created a comprehensive database of plant features, e.g., Arabic names and flowering times.
- **Software development:** a preliminary machine learning (ML) model based on DenseNet with fine-tuning was used to classify the dataset, reaching a test accuracy of 80%. Various pre-trained CNNs, novel architectures, and classical classifiers were tested. We expect the model to improve in accuracy once the dataset is expanded with field data.
- **Fieldwork preparation:** posters encouraging students to volunteer, along with a registration form, were hung around campus, displayed on screens, shared in emails, and posted on university social media pages. An order was placed for two hard disks to store the collected data.
- **Workshops:** 2 workshops were conducted. The 1st was with the SBR team to present our project. The SBR team expressed interest in the project, highlighting how our solution will facilitate their taxonomic work. The 2nd was conducted to train the first batch of students (registered for May field trips) on data collection and field logistics.
- **Fieldwork:** one trip was conducted to collect plant species data, engaging 20 students. We have 64 students registered so far, for the upcoming field trips from the end of May to the end of July. Students will be transported to and from SBR and AUB and provided with a box containing breakfast, lunch, a snack, and water.
- **Smartphone app:** comprehensive research on user experience design (UXD) was conducted to explore various methods in the field. In addition, a review of all plant ID apps available on the market was performed to find the best features to display in the app. A preliminary app wireframe was created based on UXD design principles, market research, and team brainstorming.



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Team Update: Solar PV Powered IoT - Sustainable Smart Greenhouse - USA (WV)

1. We invited local café owners and staff to explain our project's purpose clearly, met with the IEEE WV Section for financial support, and discussed solar panel placement and foundation design with the garden manager during a team meeting.

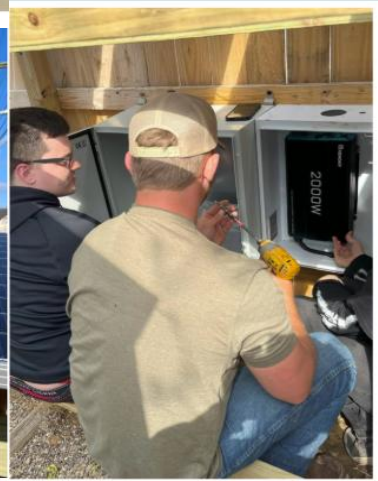
2. After receiving financial support, we opened a dedicated university account to manage funds and purchase necessary materials. We conducted educational sessions for students and installed the solar panel foundation, solar panels, battery, charge controller, and inverters.

The remaining funds were allocated to external installations, including a cabinet that required additional expenses. To ensure durability, all external connections were upgraded to be waterproof.

3. Additionally, each team began implementing fan control and smart irrigation operations using necessary smart sensors.

Summary of work found here:

https://drive.google.com/file/d/11kmIYj_910V5roF0-0FgV7NOA5uut9gR/view



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Call for *Artificial Intelligence and Autonomous Systems* Community Projects

PROPOSAL DEADLINE: October 15, 2024

IMPORTANT DATES

Project Submissions 15 October 2024	Projects Begin January 2025
Project Selection December 2024	Projects Completion January 2026

Show how AI Technology can make a difference in your community!

EPICS in IEEE is excited to launch our fall call for proposal that will fund applications of artificial intelligence and autonomous systems. We encourage teams to explore technical applications of machine learning, fuzzy systems, evolutionary computing, embedded intelligent systems, generative AI, hybrid intelligent systems, robotics, drone technologies, assistive technologies.

EPICS in IEEE proposals should address specific applications of AI in industries such as healthcare, agriculture, education, environmental improvements, and other applications for societal benefit. Student teams can win $5,000-10,000 USD to build their prototype or solution.

Partner with EPICS in IEEE to support the selected projects for this call!

By partnering with EPICS in IEEE, your Technical Society can create an opportunity for community engagement for your student members, young professionals and volunteers through our established infrastructure for service-learning projects. Help us support students from around the world who want to make an impact in their local communities!

Ready to partner?

Email us at epicsinsieee@ieee.org

SUBMIT A PROPOSAL

Each team must:

- *Include students!* Young professionals and professional IEEE members are able to submit a project, but high school or university students should be significantly involved in the design and deployment process.
- *Partner* with a community organization
- *Submit* quarterly progress reports and a final summary report.
- *Use funding* for materials related to the project. (*i.e, salaries, honorariums, personal computers, significant capital equipment or research supplies, etc. are not eligible for funding.*)
- Teams must submit their proposal through the *EPICS in IEEE proposal platform.*

IMPORTANT DATES

Project Submissions 15 October 2024	Projects Begin January 2025
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epics.ieee.org

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2025 Call for Proposals

Call for AP-S Service-Learning Projects - that Address Local Community Needs

IEEE Antennas and Propagation Society (AP-S) is partnering with EPICS in IEEE to support AP-S Community Engineering Projects. The EPICS in IEEE service-learning projects are an opportunity for students to work with IEEE members and community organizations to address the local technological needs in their communities. Through their service-learning projects, the students will also develop critical knowledge and skills to help them succeed in their future engineering careers.

Check out the Call for Proposals webpage for more information about how AP-S Members can create a team and submit a project proposal. All projects should involve AP-S members, and AP-S-relevant technology should be used in the proposed solution to address the community challenge. Projects can fall within any of our four pillars: Environment, Education and Outreach, Access and Abilities, and/or Human Services. Selected projects will receive up to $10,000 USD, mentorship, and resources.

Deadline to submit project proposals is May 1st, 2025. Call for Proposals-Webpage

EPICS in IEEE offers a detailed training course on “How to Write an EPICS in IEEE Project Proposal.” We encourage all those interested in submitting a proposal to review the training to learn more about the EPICS in IEEE requirements and tips for writing an outstanding proposal. https://epics.ieee.org/resources/

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AP-S COPE Funding Request Deadline for 2025 – MARCH 31st, 2025

- AP-S COPE aims to fund projects that use IEEE expertise well, exhibit strong technological components, and engage with the community clearly, indicating that the proposed solution is both desired and feasible. Established relationships, ideally documented, with stakeholders involved in the project, implementation with a clear, detailed, and credible Project Assessment Matrix, Project Implementation Plan, and Budget. The team should demonstrate combined experience to credibly execute the project, identify and address potential risks, and ensure the project has 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 immediate impact on poverty mitigation and inequality reduction through the following project areas:

- Upgradation of marginalized population
- STEM education for marginalized population
- Information and Communications Technology (ICT) for the underserved population
- Sustainable Power Sources for the underserved population
- Water, Sanitation, and Hygiene for the underserved population

IEEE AP-S Antennas and Propagation Society

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Summary

- AP-S COPE/Chapter/SIGHT/EPICS collaborations helped in AP-S goals by addressing the technology divide issues and supporting know-how and funding for humanitarian Projects, online tutoring for virtual education in schools, and the supply of computers, internet, and required logistics in underserved regions worldwide.
- Creating sustainable mindsets is critical for societal prosperity, preservation of nature, future business success, and the credibility of the concept of sustainability itself.
- AP-S COPE Collaboration with IEEE Inter-Societies, ISV, and Try Engineering Projects to spread Science and Engineering Education to the community.

Collaborations:
Together we can make a difference !

Stay Safe and Healthy.
Thank You !

IEEE AP-S Antennas and Propagation Society

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