



# Region 9 Latin America and The Caribbean

*Alberto Sánchez, Past R9 Director*

*March 2022*

# History

- **1922** First section from the AIEE is founded in Mexico
- **1963**: AIEE (Founded in 1884) and IRE (Founded in 1912) merged to become IEEE.
- **1963-1965**: IEEE Sections outside US (Regions 1-6), Canada (R7) and Europe (R8), were named "rest of the World" or "Region 9".
- **1966**: The growth of IEEE's activities in Latin America led to IEEE officially forming an entity with its own structure, not only geographically, but also with independent administration.
- **1967**: After it is decided that R9 should be composed of only Countries from Latin America, R10 is formed.
- **Website**: <https://r9.ieee.org/region-9/historia/>

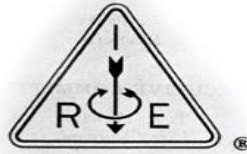


# History

1884 ..... 1912 ..... **1963** ..... Present



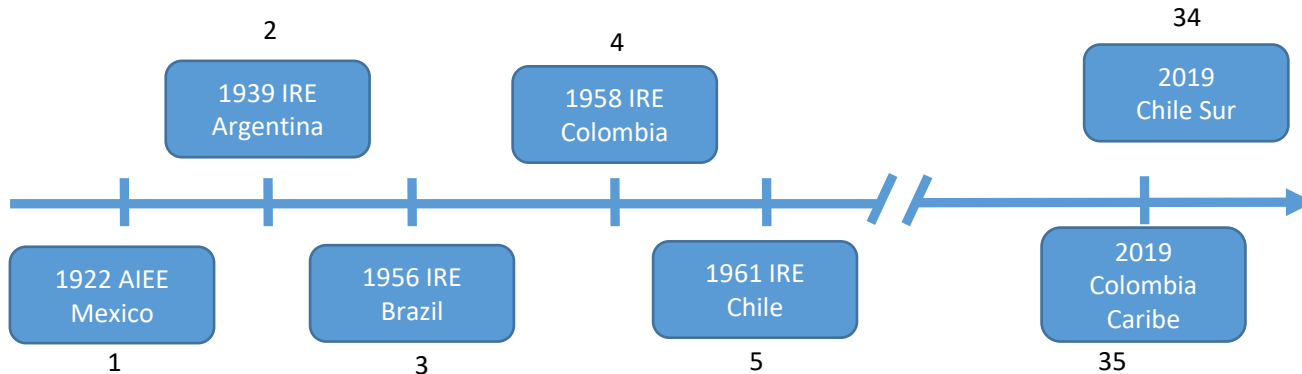
**AIEE**  
American Institute  
of Electrical Engineers



**IRE**  
Institute of Radio  
Engineers



AIEE and IRE merged to  
become the Institute of  
Electrical and Electronic  
Engineers, or **IEEE**.



## 5 Geographical Councils

### México Council

Founded: : 1977

Sections: México, Monterrey, Morelos, Guadalajara, Guanajuato, Centro Occidente, Aguascalientes, Querétaro, Puebla and Veracruz.

Chair: **Patricia Guzman**

### Capana Council

Founded: : May 24, 1982

Sections: Costa Rica, El Salvador, Honduras, Guatemala, Nicaragua and Panamá.

Chair: **Mauricio Quiñones**

### Andean Council

Founded: June 23, 2001

Sections: Bolivia, Colombia, Colombia Caribe, Ecuador, Perú and Venezuela.

Chair: **Carlos Lozano**

### Cono Sur Council

Founded: 2014

Sections: Argentina, Paraguay, Chile, Chile Sur and Uruguay.

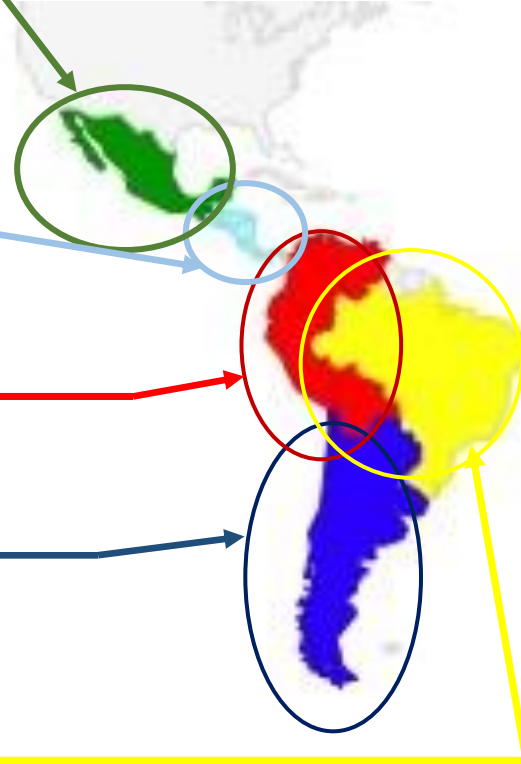
Chair: **Gustavo Giannattasio**

### Brazil Council

Founded: March 23, 1970

Sections: Bahia, Centro-Norte, Minas Gerais, Rio de Janeiro and South Brasil.

Chair: **Thelma Rodriguez**



## Goals 2022-2023

As presented during the 2019 campaign for the position of Region Director, I proposed to focus our administration in six important topics

- Community
- Membership
- Public Relations
- Growth
- Strategies
- Volunteers



# Region 9 Executive Committee 2022-2023

*Region Director*



**Enrique Tejera**

*Region Director Elect*



**Jenifer Castillo**

*Past Regional Director*



**Alberto Sánchez**

*Treasurer*



**Augusto Herrera**

*Secretary*



**Diana Valadez**

# Region 9 in numbers (Jan 2022)

- Members 16,947
- Sections 35
- Sub-sections 16
- Student members (GSM included) 7,772 (6,363 – 1,409)
- Young Professionals 4,420
- WIE 3,088
- Student Branches 560
  - Technical Student Chapters 790
  - Student Affinity Groups 207
  - HKN Chapters 3
- Technical Chapters 241
- Affinity Groups 68
  - WIE 25
  - YP 35
  - Life Members 8





# HAC/SIGHT Projects in Region 9



## ARGENTINA

### COVID-RC: CENTER OF OPPORTUNITIES TO ALLEVIATE INEQUALITY AND DETERIORATION OF RURAL COMMUNITIES

**TEAM:** Student and Professional IEEE Members from the IEEE Argentina Section



### TECHNOLOGY TO BENEFIT ONE COMMUNITY

The Chaco province is the poorest in Argentina, with extreme living conditions and a lack of employment, health, and educational resources. The arrival of COVID-19 only worsened the situation. Student and Professional IEEE Members from the IEEE Argentina Section worked to mitigate various aspects of the pandemic in one local village by installing technologies that would improve daily lives in the community.

The first activity was the purchase of a tower and transmission system for internet service to the entire area of "La Medialuna." A virtual course was held to provide technical support to the community—with sixty teachers and students from a nearby city receiving training on rural electrification systems to allow them to maintain the installed system. The IEEE team also worked with community members to build a cistern that allows the collection of rainwater as well as a storage tank to help with municipal water delivery. The last stage was to bring power to the community center. Along with two sets of solar panels, an electrification system was installed on-site in La Medialuna by the IEEE volunteer team.

### IMPACT

While long-term outcomes have yet to be assessed, the two sets of solar panels installed allow 25 families in the region to access renewable energy, 11 families to access clean water from the cistern, and 23 students to benefit from the installation of the Wi-Fi tower. The community center also serves as a local healthcare center and classroom for school and workshops.



## BRAZIL

### ENGINEERS ASSISTING VENTILATOR MAINTENANCE

**TEAM:** IEEE Members from the Rio de Janeiro Section and the IEEE Rio de Janeiro Young Professionals Affinity Group



### ENGINEERING TO SAVE LIVES

With the current pandemic scenario for COVID-19, hospital centers around the world face several challenges to treat patients. In Brazil, many ventilators are out of use due to a lack of maintenance and repair. IEEE Students, Graduate Students, and Professional Members from the IEEE Rio de Janeiro Section and the Section's Young Professionals Affinity Group set their minds and talents to help rectify the situation.

The IEEE project team assessed mechanical ventilators by addressing a backlog of 398 ventilators awaiting repair in the Rio de Janeiro state. They also trained other volunteers to help in the future. The project was implemented in different stages: from online training and mentoring to the repair of ventilators at maintenance spots. With a methodology for autonomy and the exchange of knowledge, the training of volunteers grew at each new stage, resulting in a network of people trained to assist in the fight against COVID-19. The IEEE team worked with local universities, professional associations, industry representatives, and the Brazilian government to implement the project.

### IMPACT

The project benefited six hospitals which received the repaired devices. Due to the sharing of knowledge and the networking that arose from this initiative, it can be replicated in all places where IEEE has a presence. The project team received an IEEE Member and Geographic Activities (MGA) Achievement Award for engaging IEEE volunteers to work collaboratively with external institutions and the community.



## EL SALVADOR

### 3D FACE SHIELD FOR MEDICAL AND AUXILIARY STAFF

**TEAM:** Students from four IEEE Student Branches and Professional IEEE Members from the IEEE El Salvador Section



### BUILDING PARTNERSHIPS FOR THE COMMUNITY

In 2020, El Salvador was exponentially affected by the COVID-19 pandemic. When faced with the grim statistics overwhelming their country, four IEEE Student Branches and Professional IEEE Members from the IEEE El Salvador Section took the initiative to manufacture visors for PPE. The IEEE team worked to produce 3D-printed visors for frontline medical personnel to address the shortage of PPE in the country.

To make the production of the visors a reality, a nationwide call was issued for 3D printing equipment. Working with organizations and individuals across El Salvador, the IEEE team identified 24 3D printers and defined two manufacturing modes, centralized and decentralized, to move the project forward. The centralized mode featured 3D printers that were moved to the same building, while the decentralized mode featured volunteers working from their homes with their own 3D printers. Both manufacturing modes worked to deliver medical visors for the personal protection of healthcare workers—and the IEEE team was able to deliver 1,300 visors to twelve local health centers and hospitals.

### IMPACT

The main beneficiaries of this project are the health centers for which 1,300 anti-splash visors have provided protection for frontline workers. In the course of the project, the IEEE El Salvador Section formed impressive collaborations with different universities, local companies, non-profits, government entities, and the national Ministry of Health—all working together to successfully address an urgent need in their community.





# HAC/SIGHT Projects in Region 9



## GUATEMALA

### DISTANCE EDUCATION PROGRAM ADAPTED TO COVID-19

TEAM: Professional Members from the IEEE Guatemala Section and the Guatemala Section SIGHT Group



#### ADAPTING EDUCATION FOR VIRTUAL LEARNING

Like much of the world during the COVID-19 pandemic, Guatemala suspended in-person elementary school classes to help combat the spread of the disease. To help with the situation, members of the IEEE Guatemala Section and the Guatemala Section SIGHT Group developed a pilot program of education classes adapted for COVID-19. The IEEE team provided training and equipment to facilitate virtual classes for elementary school students and their teachers at the "El Reformador" school in a rural community in Guatemala.

The team of IEEE volunteers worked with the teachers to adapt the curriculum's content to be delivered virtually. During the 10-week pilot period, 28 students from fourth grade and their teachers held 45 days of classes using electronic equipment and a modified curriculum.

The program's success was evaluated by monitoring several result indicators: commitment of parents, adoption of technology by the student, the teacher's ability to adapt the curriculum to the virtual model, and the academic performance of the students. The ability of students and teachers to use technology for learning was high, as the participants adapted to deficiencies in their electrical installations, internet access, and lack of educational resources.

#### IMPACT

While not a long-term replacement for in-person learning, the virtual classes performed well.

The pilot program showed that students used their equipment appropriately, and that this technology was a useful tool for their learning. The IEEE team proved that virtual classes could help reduce the digital divide and improve education in Guatemala—and this pilot project showed that with the right tools, positive changes can be achieved.



## MEXICO

### UV-A LED ARRAYS AND PHOTOCATALYTIC TiO2 COATINGS ON PROTECTIVE SCREENS FOR SARS-COV-2 INACTIVATION

TEAM: Professional Members from the IEEE Puebla Section SIGHT Group



#### RESEARCHING FOR BETTER PROTECTION

While doing experimental work in a global pandemic is a huge challenge, the IEEE SIGHT Group in Puebla, Mexico was able to conduct accurate research and create an innovative solution to a real-world problem. The IEEE team developed large-area folding screens that protect medical staff from large concentrations of SARS-Cov-2 viruses at a local hospital—reducing hospitalization time of Covid-19 patients by about 20% (from 25 days down to 20 days on average).

In collaboration with the Universidad de las Américas, Puebla, and the University of Texas at San Antonio (UTSA), the research team was able to confirm the efficacy of using UV-A LED arrays and photocatalytic TiO2 coatings for inactivation of the virus that causes COVID-19. The screens can contain the cloud of coronavirus microdroplets expelled by an infected patient during coughing, talking, or breathing—enabling safe interaction with medical staff. In addition to the large area screens, the team also donated more than 400 plastic face shields coated with this photocatalytic material.



#### IMPACT

The IEEE SIGHT Group in Puebla, Mexico is currently developing a simplified process for the enhanced photocatalytic coating on plastic face shields, with the aim of a lower fabrication cost. They have received an additional round of funding from HAC/SIGHT in 2021 to deliver 2,000 face shields with the coating to individuals working at crowded and high-risk places like local hospitals, schools, churches, public offices, and vaccination sites.



## PERU

### SIAMA: INTELLIGENT SYSTEM TO IDENTIFY, REPORT, ANALYZE, MONITOR, AND ASSIST

TEAM: IEEE Members from the IEEE Peru Section



#### DESIGNING AN INTELLIGENT MONITORING SYSTEM

The COVID-19 pandemic represented multisectoral challenges for Latin America. Scenarios of limited economic resources, dissatisfaction with social demands, and oversaturation of healthcare systems are just some of the difficulties of this humanitarian crisis. IEEE Members from the IEEE Peru Section developed a system to address the country's difficulties in diagnosing, monitoring, and recognizing COVID cases, coined SIAMA.

The IEEE team planned, designed, and produced an intelligent system that offers reliable information to the healthy population, tracks diagnostic test results of suspected cases, and monitors confirmed COVID-19 cases to promote isolation at home to ensure the health of both the population and first responders. The platform was developed to have four main modules: Informative, Evaluation, Monitoring, and Identification. SIAMA includes a thermometer, NFC sticker, and oximeter all working in a multisystem platform with a voice assistant. The information module provides daily news, and the monitoring module works in coordination with healthcare personnel to facilitate patient assessment while they remain at home.

#### IMPACT

The project was successfully implemented in the Alivian clinic in Peru, and its use will be expanded in the future to cover the Arequipa region. A key benefit of this program was reducing the human resource gap as well as the mortality of patients who could not easily access healthcare. SIAMA has been used with more than fifty patients, and the team is still working on improvements and refinements to better meet the needs of its users. During the project implementation, four members of the team became members of IEEE.



# Move in a nutshell

- ▶ **For** Disaster survivors
- ▶ **Who** have survived the initial catastrophe,
- ▶ **MOVE** (MOBILE VEHICLE )
- ▶ **Is** an IEEE project that creates and operates a vehicle for disaster relief
- ▶ **That** provides needed communications, light & power support to victims and volunteers helping victims
- ▶ **Unlike** some First Responder Efforts (e.g., ARRL, RACES)
- ▶ **Our project** is intended to help the disaster volunteers and survivors by supplying valuable services until normal infrastructure is restored.
- ▶ **Additionally** it energizes the IEEE volunteer base, highlights skills, promotes public awareness and more



**MOVE** DISASTER  
RELIEF &  
OUTREACH  
AN IEEE INTERNATIONAL PROGRAM  
Puerto Rico



# Hurricane Maria Response

**TOGETHER WE CAN: PROYECTO BRILLO**



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## Help Victims of Hurricane Maria by Donating to the IEEE Foundation

Volunteers use the money to provide solar lanterns and charging stations to those still without power  
By KAREN KAUFMAN 9 February 2018

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**MOVE** DISASTER RELIEF & OUTREACH  
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Puerto Rico

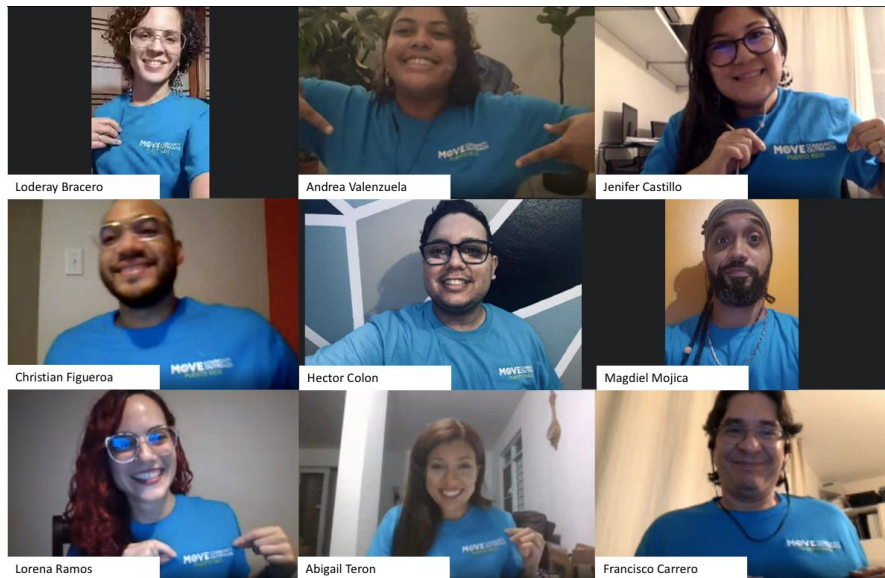
# MOVE PUERTO RICO-Red Cross Partnership

## Current Status

- ▶ Disaster Technology Service Member (DST)
  - DST Supervision
- ▶ Disaster Assessment Information Planning
- ▶ Disaster Workforce Engagement Team
  - Volunteer Connection Program Manager Regional Program Lead
- ▶ Satellite Workshop
- ▶ Preparedness Calls



# MOVE International Puerto Rico



- ▶ Call for volunteers during 2021
- ▶ Red Cross Volunteer since March 2020
- ▶ Puerto Rico & Caribbean Section
- ▶ Nine active members
- ▶ More than a 1000 hours invested in training, technical support, hands on activities



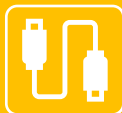
# Modular MOVE: Emergency Kit



Power generation



Power storage



Device charging



Radio communications

# What is Modular MOVE?

- ▶ The “Modular MOVE” is replicable
- ▶ Fits the needs for different disaster events at a global level.
- ▶ Manageable annual maintenance
- ▶ Although it may not have all the capabilities that the actual truck, it will be enough to support a disaster response in alliance with an organization like Red Cross.
- ▶ Be portable
- ▶ Be easy to store



# Items Example Emergency Kit



Power Bank Charger

Storage for cords/wires

Internet Communications  
Device (w/WiFi)

Lithium UPS & Converter

Expandable Solar Panel

**MOVE** DISASTER  
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# The challenge

- ▶ Understand what could be deescalated
- ▶ Do not loose overall the functionality
- ▶ WHAT TO PURCHASE!: Decide scope and initial focus:
  - Power
  - Communications
  - Water
- ▶ How to store it
- ▶ Logistics (Thank you Christian Figueroa!)

# Modular MOVE



**MOVE** DISASTER  
RELIEF &  
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Puerto Rico



# First Deployment

*DRO536-22*



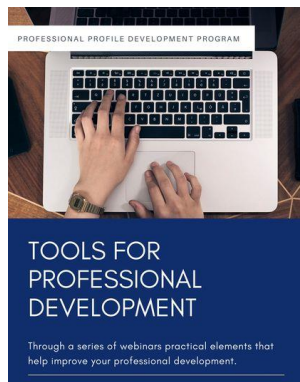
# Young Professionals



## IEEE YP R9 Ethics Competition Spanish edition results

### Winners

- 1<sup>st</sup> place: Muy IEEEticos Team, Ecuador Section.
- 2<sup>nd</sup> place: Puerto Rico Team, Puerto Rico & Caribbean Section.



Organized by:



**BUSINESS SKILLS FOR ENGINEERS** Webinar in spanish

By: **Marcelo Bobadilla**

Engineer from the University of San Carlos de Guatemala; with specialization courses in marketing, sales, management, leadership, finance and technology.



**EFFECTIVE PUBLIC PRESENTATIONS** Webinar in spanish

By: **César Buriticá**

Social Communicator - Journalist from the Universidad Pontificia Bolivariana de Medellín, Colombia. Professor at the Faculty of Social Communication of the same university and candidate for a master's degree in Political Studies.




✓ Survey of 4,000 members: 41% are interested in courses to improve soft skills.

✓ 11 webinar with more than 1,300 registered, 74% IEEE members

**IEEE READING CLUB**

**IMPROVE YOUR ENGLISH SKILLS**

1. Complete the form
2. Participate in the weekly activity
3. Learn English vocabulary and pronunciation



**YP FAQ** Questions and Answers for Young Professionals

**POSTGRADUATE PROGRAMS ABROAD**

Scholarships? Costs? Languages? Resolve the concerns that will help you make a decision, along with those who have already done so.



**Javier Rodán**



**Miriam Lucero**



**Andrés Muracciole**

# Women In Engineering

Joint virtual ILS: Colombia, Panama and Rio de Janeiro Section

## IEEE WIE INTERNATIONAL LEADERSHIP SUMMIT

SEPTEMBER 28 - OCTOBER 2, 2020

### Agenda

SEPTEMBER 28 - OCTOBER 2, 2020

**SEP 28**

**JULIETTE CHEVALIER**  
SOFTWARE DEVELOPER & EDUCATOR  
*"The most personalized software of the world"*

5:00PM - 7:00PM GMT -5 | 6:00PM - 8:00PM GMT -4  
7:00PM - 9:00PM GMT -3

**SEP 29**

**ANDREA ALZATE NARANJO**  
PH.D. MATERIALS ENGINEERING  
*"A little bit of innovation, a little bit of risk"*

5:00PM - 7:00PM GMT -5 | 6:00PM - 8:00PM GMT -4  
7:00PM - 9:00PM GMT -3

**SEP 30**

**ANA CAROLINA PEDREIRA**  
INNOVATION & TECHNOLOGY SPECIALIST AT TIM BRASIL  
*"Evolution of mobile technology and the future with 5G"*

3:00PM - 4:00PM GMT -5 | 4:00PM - 5:00PM GMT -4  
5:00PM - 6:00PM GMT -3

**OCT 01**

JENIFER CASTILLO, HERNIA MUÑOZ, CESIBEL CASTILLO, THAIS CAVINATTO, ALBERTO SÁNCHEZ  
**PANEL: Leadership and Empowerment of Women in Engineering / STEM**

5:00PM - 7:00PM GMT -5 | 6:00PM - 8:00PM GMT -4  
7:00PM - 9:00PM GMT -3

**OCT 02**

**NETWORKING AND CULTURAL CONTEST**  
**IEEE VOLUNTEERS AND MEMBERS ONLY**

5:00PM - 7:00PM GMT -5 | 6:00PM - 8:00PM GMT -4 | 7:00PM - 9:00PM GMT -3

## IEEE WIE INTERNATIONAL LEADERSHIP SUMMIT

September 28 to October 2, 2020  
Joint Virtual Event

Brazil  
Colombia  
Panama

794  
Inscritos

IEEE member

241

Inscritos

IEEE volunteer

83

Inscritos

IEEE WIE member

219

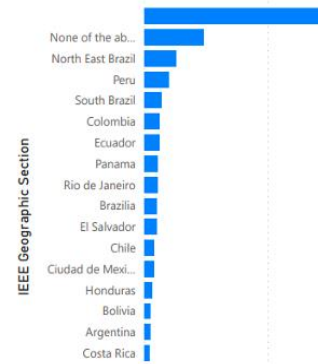
Inscritos

None

251

Inscritos

Inscritos por IEEE Geographic Section



# Women In Engineering: Outreach

## Highlight WIE Panama

Panama STAR program is a IEEE WIE Global Benchmark:

From the design of the logo, to the continuous innovations to strengthen the program





# Student Members: Student Experience

- ✓ 2020 R9 SAC Awards: **152** submissions from **16** sections
- ✓ Region 9 had the highest coefficient of events per SB until Oct 2020: **2001 events**
- ✓ Running programs include: TISP, STAR and EPICS





# Student Members: Virtual SBRM 2020 and 2021

- ✓ House cup themed competition
- ✓ Presentations in **English, Spanish and Portuguese**
- ✓ Support from CS, PES, IES, AESS and Photonics
- ✓ **1371 registrations** from 32 out of 35 sections
- ✓ Speakers from **15 countries** (including USA, R7 and R8)
- ✓ **93%** of attendants in their first SBRM

|   |                                     |                           |
|---|-------------------------------------|---------------------------|
| Inauguration/<br>Welcome Session/<br>Keynotes | Ethics,<br>Diversity &<br>Inclusion | Humanitarian              |
| Management &<br>Volunteering                  | Technical<br>activities             | Awards &<br>Regional Fair |



## Key Initiatives: Industry

- ✓ Future of WorkForce RoundTable (April).
- ✓ LatinAmerica Co-organizers and Panelists Newsletter
- ✓ Women in Industry, Co-Organizers (Late June)
- ✓ Mentorship Program with Here Enterprises Inc. (July)
- ✓ CONIIN 2021 Forum (Mid June)
- ✓ CAPANA Facebook Live interview (early July)
- ✓ Councils and Sections Industry Representatives 1st Meeting (June)
- ✓ Innovation Matrix IEEE - Survey (August)



# Key Initiatives: Educational Activities

## ★ Continuous Education

## ★ Promote courses in local languages:

- Webinar series: Tools for the 21st century engineers

## ★ Facilitate communication in local language:

- Spanish website: [r9.ieee.org/ea](https://r9.ieee.org/ea)



Webinar 2: Project management (in portuguese)



PRESENTS OUR  
**NEW WEBSITE!**  
*in spanish*

<https://r9.ieee.org/ea>



New website promotion

webinar 1 poster

# Technical Activities - CONFERENCES



## Technical Activities – STUDENT CONFERENCES



**XXIX CONGRESO**  
Electrónica - Electricidad  
**INGELECTRA 2020**





# Technical Activities – NEW INITIATIVES

## *Cooperation with other OU's*

- **IHTC R9** Agreement between Regions 7, 8 and 9. UK 2021, Canada 2022, and Region 9 2023
- **R3 AND R9 COOPERATION** R9 and the Jamaica Section (R3) are coordinating activities to Co-Sponsored Conference to be offered in the Caribbean
- **WORLD ENERGY COUNCIL (WEC)** Coordination have been initiated to have join activities and opportunities offered by the WEC that IEEE members can benefit from.
- **THE LATIN AMERICAN COMPUTING CONFERENCE (CLEI)** MOU in progress to Co-Sponsor the bi-annual event which is organized by the American Center for Computational Studies (CLEI),

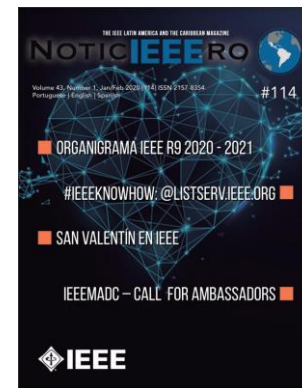
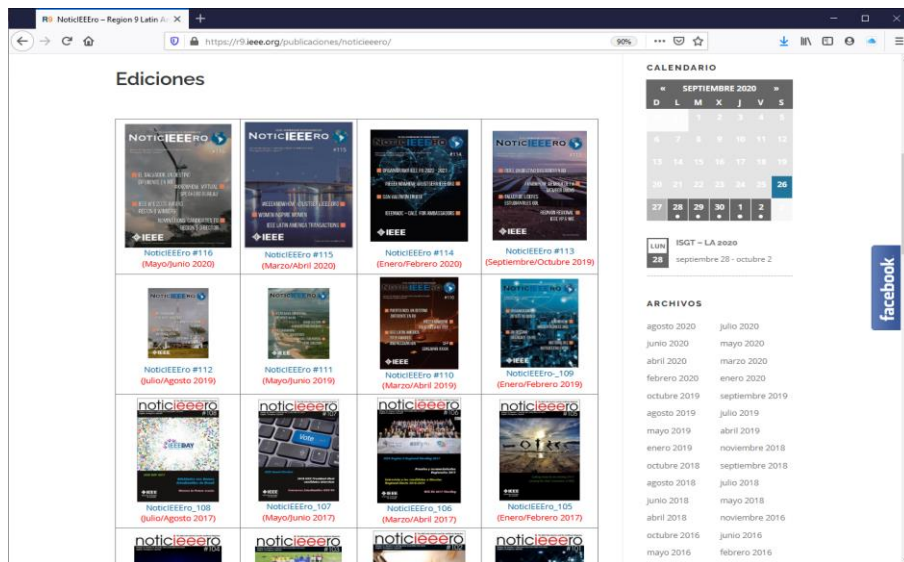
2021 IEEE International Humanitarian  
Technology Conference (IHTC 2021)

02 – 04 December 2021 / Virtual Conference

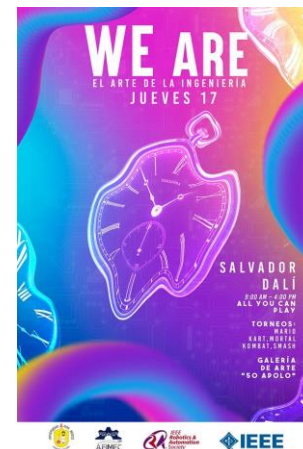
**WORLD  
ENERGY  
COUNCIL**



# NoticIEEEro



# Voluntary Contribution Fund





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