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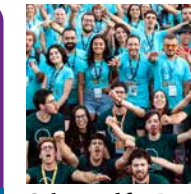

Going mad for Porto: SYP Congress, *p13*

It's election time: R8 Director, IEEE President

ELECTIONS to appoint our IEEE Region 8 Director for 2021-22, as well as global elections for the future IEEE President, Board of Directors and Divisional representatives, are already under way as you read this. Polling began on 15 August and will remain open throughout September.

Two candidates are standing for the position of Region 8 Director: Rafal Sliz (sliz.online) of Finland Section and Antonio Luque (antonioluque.org) from Spain. The winner of this election will hold the post of Region 8 Director-elect for the next two years 2019-20, during which our Director will be Magdalena Salazar-Palma, who takes over from the current incumbent Margaretha Eriksson next year.

Antonio Luque

Rafal Sliz

All IEEE members within any Region 8 Section (that is, within Europe, Middle East and Africa) whose membership subscription was active on 30 June are eligible to vote, and should already have received their election materials by post and/or email.

If you haven't yet voted, take a few minutes to read the candidates' official statements and visit their websites. The Director makes a huge impact on how Region 8 is run and how it is seen externally by the engineering profession and the public at large, as well as representing the Region's interests at global IEEE level. Choosing the next Region 8 Director really matters, so don't miss your opportunity to vote.

Also taking place is the annual election for the next IEEE President, chosen

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Africa Council secures approval and gets down to work in Tunis

THE inaugural meeting of IEEE Africa Council was held in Tunis at the Ramada Plaza Hotel on 29 June. In her opening remarks Region 8 Director Margaretha Eriksson expressed happiness that the proposal to establish an Africa Council had been approved by IEEE's Member and Geographic Activities (MGA) Board. She said that this would be an opportunity for African Sections and Sub-Sections to achieve more, working together.

Ms Eriksson advised Council to take ownership by leveraging on many IEEE opportunities to advance technology in Africa. She also thanked Habib Kammoun, Tunisia Section chair, for making all the arrangements for a very successful Innovation Summit the previous day.

IEEE President Jim Jefferies affirmed his support for the Council and presented IEEE's Strategy for Africa 2017-2019. The three strategy goals are to support engineering education, build a sustainable community of IEEE members and support government policy development. He enumerated the achievements in Ghana, Kenya, Uganda, Rwanda and Zambia – the five countries in the present scope.

Gloria Chukwudebe, IEEE Africa Area chair, presented an overview of the Area activities and accomplishments and listed Algeria, Ghana, Kenya, Morocco, Nigeria, South Africa, Tunisia and Zambia as foundation members of the Council. She thanked Section chairs who had signed the petition for the Council for their commitment and also her gratitude to Vincent Kaabunga, chair of Region 8's ad-hoc Committee on Activities in Africa, Kathleen Weeks and all IEEE staff who assisted with documentation.

A series of highly informative presentations on Section activities and challenges were delivered by the Section and Sub-Section chairs who were attending the meeting.

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IEEE DAY 2018
LEVERAGING TECHNOLOGY FOR A BETTER TOMORROW

What are your plans for IEEE Day 2018?

TO mark IEEE's origins and celebrate its worldwide membership, IEEE Day is held on the first Tuesday every October. It was in this month, back in 1884, that the newly formed American Institute of Electrical Engineers (AIEE) came together in Philadelphia, USA, for its first technical meeting. Almost 80 years later, AIEE merged with the Institute of Radio Engineers, adopting the name IEEE.

This year's IEEE Day is on 2 October. Its recurrent theme, however, is resolutely forward-looking: 'Lev-

...continued on page 3 ▶

If no-one else is doing it, it's time to do it yourself

"WHY do you never write about us?" This is a frequent question thrown my way as I rub shoulders with fellow members at IEEE events. Everyone appears to be baffled at how to ensure their Section, Chapter, Affinity Group, Student Branch, special-interest committee, social event or IEEE-sponsored conference enjoys adequate coverage in member-focused newsletters such as *IEEE Region 8 News*.

I confess to doing this myself with respect to other IEEE publications, grumbling away that they all seem to be overly US-centric. Reading some of them, anyone might assume that IEEE was a uniquely American institute, given that vast geographical units with huge memberships such as Region 8 receive scant recognition in IEEE's various magazines and newsletters.

It's an easy question to answer: if they are not yet writing about you, it's because there are unaware of your activities. And it's an easy problem to fix: tell them what you're up to. There's no need to wait for local coverage to materialize by magic: instead, write it up yourself and send it in to the editors. I assure you they will be immensely grateful.

I have long thought that every executive committee in IEEE should appoint a publicity officer who deals with this kind of thing. But in fact anyone in Region 8 can promote forthcoming events and publicise their success afterwards simply by writing about them and sharing your news – with us!

Alistair Dabbs

LETTERS TO THE EDITOR

Standing on (amorphous) shoulders of giants

I APPLAUD the recognition of the work at Dundee on the doping of amorphous silicon to realise transistors ('Milestone celebrates the invention of TFT flat panel displays at Dundee University' *IEEE Region 8 News* Vol 21 No 2, June 2018).

I would like to point out, however, that the amorphous silicon which enabled this work was made possible by the invention by Sterling and Swann at the Standard Telecommunication Labs in Harlow, Essex, United Kingdom.

This work, also a British invention, was granted both British and American patents for the deposition by the Glow Discharge method which allowed significantly lower reaction temperatures enabling many new and subsequent applications which are embedded in modern electronics.

The account of this work is chronicled on the IEEE History website http://ethw.org/First-Hand:The_Birth_of_Glow_Discharge_Chemistry_(aka_PECVD).

This work was acknowledged by the late Walter Spear of Dundee University in his 1988 Bakerian lecture to The Royal Society.

Richard Swann
IEEE Life Member, MIET CEng

■ We welcome letters from readers in response to articles or on any topic relating to IEEE in Region 8. Note that letters may be abridged for reasons of space. Write to us at r8news@ieee.org

IEEE region8news

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Submitting articles
We welcome news, event reports, articles and letters from any member of IEEE. You can email these to the editor at r8news@ieee.org, either putting your text directly in the body of the email or in an attached document, as you wish. We gratefully accept any photos or graphics accompanying your articles but please make sure they are undoctored high-resolution image files. You can read our full guide to writing and submitting articles at https://goo.gl/hiiTpj

Deadlines for upcoming issues

December 2018 issue.....*deadline: 15 October 2018*
March 2019 issue.....*deadline: 15 January 2019*

region 8 IEEE

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It's election time: R8 Director...

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by all IEEE members worldwide. For the first time, all three President-elect candidates originate from outside the US, two of them from Region 8. Few members will have failed to spot their promotional messages over recent months prior to the opening of polling, and many will have seen or heard them in person at various international IEEE meetings and conferences during 2017 and 2018.

Just in case you missed out on all this, the President-elect candidates are: Vincenzo Piuri (vincenzopiuri.org) from Italy, Jacek Zurada (jacekzurada.org) based in Kentucky, US, but originally from Poland, and Toshio Fukuda (toshiofukuda.org) from Japan.

Vincenzo Piuri

Jacek Zurada

Toshio Fukuda

And there's more: depending upon your membership and location, you may be eligible to vote in a number of additional elections for IEEE posts at the same time – Division directors, IEEE vice-presidents and so on. It can seem daunting for first-time voters but rest assured that you don't need to do it all at once. Online polling allows you the freedom to pick specific elections to participate in and revisit to complete your voting in others later on. You will need to use the election web links and personal voting credentials that have been sent to you directly, and you can read more about IEEE's election process at ieee.org/about/corporate/election.

Just make sure you cast your votes before all polling for this round of elections closes on 1 October. Results will be published by IEEE head office a few days later, and of course we will provide a roundup of the winning candidates in the next issue of *IEEE Region 8 News*.

New ways to share your local successes with the Region

Region 8 Director ***Margaretha Eriksson***

WHAT holds our diverse Region together? Is it possible that many sorts of communication – by mail, phone, newsletters and social media – is the answer? I have heard from many of you that we need better and more frequent communication in our Region. Whether you consider yourself "just a member", a local leader, a student or a professional engineer, timely and transparent communication is most important.

I'm sure you are familiar with the publication in your hands, the quarterly printed Region 8 newsletter, as well as our Region 8 web site and numerous IEEE-related pages on social media. However, news from Sections, Societies and Affinity Groups stays mostly local since there is a lack of means for immediate sharing. At the same time very interesting news regarding IEEE, global technological breakthroughs and initiatives are often not shared widely.

In response to your requests, we have created *IEEE Region 8 Today*, a digital news portal with feeds from you, as well as interesting content from *IEEE Spectrum* and other IEEE sources. One could describe *IEEE Region 8 Today* as a moderated online newsletter, with the latest news and achievements, future events, and information science and innovation you want to share with members in Europe, Middle East and Africa.

It is very easy to contribute: just send your write-up, invitation or news to the editors of *IEEE Region 8 Today*, and they will publish it for you!

To enquire about becoming a regular contributor, go online to: ieeer8.org/news/the-new-initiative-ieee-region-8-news-digital-calls-for-contributors

How does this complement *IEEE Region 8 News*? Well, short articles and future-oriented information such as information on events to come and news flashes about interesting topics fit into *IEEE Region 8 Today*, whereas longer articles and reports from past events goes into the printed quarterly newsletter.

What goes into *IEEE Region 8 Today* is what you would like to see and share there, so when you have something to share, share it with *IEEE Region 8 Today*.

You will find the publication at region8today.ieeer8.org and on Facebook at facebook.com/ieeeregion8today. See also the article in this issue on page 5.

Enjoy!

What are your plans for IEEE Day 2018?

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eraging Technology for a Better Tomorrow'. Or in other words, while the world benefits from what's new, IEEE focuses on what's next.

Events taking place around the world range from technical symposia to public engagement with local communities, and from interactive demos to general family fun. In previous years, weather-permitting, even street parties and barbecues have been involved.

Most IEEE Day events are organized at local grassroots level by volunteers from Student Branches and Young Professionals Affinity Groups, so if you want to be part of it, contact your local IEEE representatives. It's only a few weeks away, so don't leave it too late.

Keep your eye on the website (ieeeday.org) because the IEEE Day 2018 team will be running photo and video contests, offering prizes to those sending in the best media captured on the big day. You can also follow what everyone else is up to via social media:

- Twitter: contact @IEEEDay and share your updates using the hashtag #IEEEDay2018
- Facebook: facebook.com/IEEEDay
- Instagram: instagram.com/ieeeday

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These included Abdelouahab Mekhaldi (Algeria), Eric Kuada (Ghana), Charles Onyango (Kenya), Nasser Assem (Morocco vice-chair), Raphael Onoshakpor (Nigeria), Darryn Cornish (South Africa vice-chair), Habib Kammoun (Tunisia), Simon Muwowo (Zambia), Shedden Masupe (Botswana) and Lwanga Herbert (Uganda).

Two IEEE volunteers from Burkina Faso – Guinko Ferdinand and Yacouba Ouattara – attended the meeting and shared their ideas about how to increase IEEE activities in French-speaking African countries.

Africa Council secures approval and gets down to work in Tunis

Further presentations on how Africa Sections can leverage available opportunities in their organizations were given by IEEE Educational Activities Board (EAB) Committee member Sohaib Sheikh, Jamil Dimassi (IBM University Relations leader in North-West Africa), Jelel Ezzine (UNESCO chair on Science, Technology and Innovation Policy) and Bilel Jamoussi (ITU-T Study Groups Department chief).

Other key participants at the meeting included former Region 8 Director Jean Gabriel Remy, IEEE chief information officer Cherif Amirat, Africa Area Committee member Shaun Kaplan, Tunisia Section chair-elect Adel Alimi and Poland Section Student Activities chair Maciej Borówka.

In accordance with Africa Council bylaws, the following provisional officers were nominated and approved: Gloria Chukwudebe as pro-tem chair, Habib Kammoun as secretary and Shaun Kaplan as treasurer. To prepare for the election of Council officers, Raphael Onoshakpor will serve as the Nominating Committee chair, with all constituent Sections having a representative on the Nominating Committee.

The deadline for conclusion of the election is September, while the next Africa Council meeting is scheduled to be held during the Region 8 Committee Meeting in October.

Gloria Chukwudebe
gloria_chukwudebe@ieee.org

GSM pioneers top the list of Region 8 recipients at IEEE Honors Ceremony

FIVE IEEE members within Region 8 were awarded with prestigious achievement medals at this year's IEEE Honors Ceremony, which took place at the The Palace Hotel in San Francisco, California, USA, on 11 May. The full list of those honoured with medals, field awards, honorary membership and Fellow elevation was released just after we went to press with our June issue, so here follows a run-down of the recipients within our Region.

Thomas Haug (Sweden) and ***Philippe Dupuis*** (France) of the European Telecommunications Standards Institute (ETSI) are co-recipients of the IEEE/RSE Jame Clerk Maxwell Medal for their leadership in the development of the first international mobile communications standard – GSM – with subsequent evolution into worldwide smartphone data communication. They received their medals at a ceremony in Edinburgh, UK (see panel on this page).

Jerome Faist (Switzerland) of ETH Zurich is a co-recipient, with Frank Tittle of Rice University in Houston, USA, of the IEEE Medal for Environmental and Safety Technologies for their pioneering contributions to the quantum cascade laser (QCL) and optical chemical sensors for environmental sensing.

Erdal Arikan (Turkey) of Bilkent University in Ankara receives the IEEE Richard W Hamming Medal for his contributions to information and communications theory, especially the discovery of polar codes and polarization techniques.

Heinz Stoewer (Germany) of Space Associates in Munich receives the IEEE Simon Ramo Medal for his pioneering accomplishments in and technical leadership of space systems engineering at ESA and NASA, and for his profound influence on the teaching and practice of systems engineering.

Technical Field Awards

Another four members from Region 8 were recognized by the Institute for their work in specific technical fields:

Siegfried Selberherr (Austria) of the Vienna University Of Technology was recipient of the IEEE Cledo Brunetti Award for his pioneering contributions to Technology Computer Aided Design.

Peter Stoica (Sweden) of Uppsala University received the IEEE Fourier Award for Signal Processing for his broad contributions to research and education in statistical signal processing and its applications.

Rainer Marquardt (Germany) of Bundeswehr University Munich received the IEEE William E Newell Power Electronics Award for the development of the modular multilevel converter application in medium drives and high-voltage DC transmission systems.

Ursula Keller (Switzerland) of ETH Zurich received the IEEE Photonics Award for her seminal contributions to ultrafast laser technology enabling important industrial applications and novel scientific breakthroughs.

Further to these individual Technical Field Awards, the *IEEE Spectrum* Emerging Technology Award was presented to ***ASML Holding NV*** (Benelux) in the Netherlands for the company's development of a complete, working Extreme Ultra Violet (EUV) lithography system for the commercial production of integrated circuits.

IEEE President Jim Jefferies (left) reads the citation for Philippe Dupuis (centre) and Thomas Haug.

Photos courtesy Gary Doak Photography

Maxwell medals: a royal occasion

UNABLE to attend the Honors Ceremony in San Francisco, this year's co-recipients of the IEEE/RSE James Clerk Maxwell medal, Thomas Haug and Philippe Dupuis, accepted their awards in Edinburgh, UK, on 5 July.

Making the presentations was His Royal Highness, The Duke of Cambridge – better known to those outside the UK as the Queen's eldest grandson Prince William.

The James Clerk Maxwell medal is a joint award created by IEEE and the Royal Society of Edinburgh in 2006 to recognize groundbreaking contributions that have had an exceptional impact on the development of electronics and electrical engineering or related fields.

It is named in honour of the 19th century Scottish mathematician and physicist James Clerk Maxwell, who laid the foundations of electromagnetic wave theory, radio propagation, microwave techniques and radio communications.

The delighted recipients are presented with their prestigious awards by Prince William

Membership and Fellows

Honorary IEEE membership was awarded to ***Anton Zeilinger*** (Austria) of the Austrian Academy of Sciences in Vienna. A visionary quantum physicist and a pioneer of quantum information science, Zeilinger was cited for helping shape the future of quantum technologies, including quantum communications which will play an increasingly important role in protecting information channels against eavesdropping through the application of quantum cryptography.

Additionally, more than 60 IEEE members in Region 8 were awarded recognition this year by having their institute membership grade upgraded to that of 'Fellow'.

IEEE Fellowship is an honour conferred by the Board of Directors to acknowledge a member's extraordinary record of accomplishments in any of the IEEE's fields of interest. More information on the IEEE Fellow grade can be found at ieee.org/fellows.

Seeking nominations for 2020

IEEE's Awards Program is always on the lookout for deserving members to whom recognition is due. If you know of an IEEE colleague who might qualify for a future Technical Field Award, nominations are being solicited right now for the awards ceremony set to take place in 2020. The deadline for these nominations is 15 January 2019.

Details of each Technical Field Award, along with nomination guidelines, are at: ieee.org/about/awards/technical-field-awards

Nominations are closed for IEEE Medals and Honorary Membership; these will re-open in November.

Read the latest from around Region 8 at our news portal

NEWS portal *IEEE Region 8 Today* was launched in May to bring you the latest updates from active members within Region 8 along with technology stories from IEEE. A wide variety of tech news, IEEE volunteer articles, interviews with people who have contributed to our Region and many more interesting articles can be found at the portal, featuring Opinions, Achievements, Innovation and Events.

Every Region 8 Section or Affinity Group can share its news to the feed via its own contributor. The role of contributors is very important since they represent the point of contact between the news portal and the Section or Affinity Group, acting as our reporters in the field. The content is managed by a team of editors in collaboration with contributors.

As well as sharing online the great work being done in our Region, *IEEE Region 8 Today* aims to give an opportunity to people who are not familiar with IEEE to meet and understand what the IEEE is by its members' actions.

If you want to join the team, send an e-mail to region8today@gmail.com with your CV and samples of articles you have written, along with an endorsement letter from your Section.

Andrejs Romanovs leads the MD workshop at SYP 2018 in Portugal

MEMBERSHIP DEVELOPMENT

Porto workshop identifies IEEE benefits for YPs and students

MEMBERSHIP Development (MD) Subcommittee continues to inform and educate IEEE volunteers and members of our Region, this summer sharing the most current statistical data to Section MD officers and organizing virtual discussion platforms including our twice-yearly teleconference.

The core Region 8 MD team – Andrejs Romanovs, Matej Pacha, Ievgen Pichkalov and Region 8 vice-chair for Member Activities Antonio Luque – organized a workshop at the Region 8 Student and Young Professional Congress (SYP) held in Porto, Portugal, from 25-29 July. Two hours were devoted to key membership activities questions, interactively discussing the value and benefits of IEEE membership for students and Young Professionals.

Everyone participated to the fullest and succeeding in learning from each other. By the end, the workshop had identified a list of IEEE Membership benefits specifically relevant to students and Young Professionals separately.

The top three benefits for students were: building community, grants (travels, study) and academic resources (IEEEXplore, IEEE.tv). These were followed by: competitions (SPC, IEEEXtreme), funding technology projects, education programs (webinars, sessions, courses), volunteering (organizing conferences, building competences/leadership), communities membership, communication with professionals (STEP events, AG), and technical and professional mentorship.

For Young Professionals, the top three benefits were found to be not too dissimilar to those for students: IEEEXplore, networking and collaboration, and grants and funding. Just below these in the list were: mentorship, ResumeLab and JobSite, Collabratec, magazines and IEEE.tv, eLearning courses and Affinity Group membership (such as Women in Engineering).

Identifying benefits like this helps us to engage better with students and Young Professionals, thus developing more a valuable community around the benefits of IEEE, technology and humanity worldwide.

Andrejs Romanovs

SECTION VITALITY

Could free open-source accounts software help Section treasurers?

FOLLOWING my article in *IEEE Region 8 News* June issue, I received an interesting email from IEEE Senior Member Roger Brooks. Based on his experience, Roger suggested that "IEEE's heterogeneous financial accounting and reporting requirements" including multiple currencies could be met by the open-source software GnuCash (gnucash.org).

It is an excellent idea. The GNU Project, founded in 1984 by Richard Stallman (gnu.org), has produced more than 450 open-source software packages, including GNU/Linux and GIMP. Richard Stallman's philosophy of developing free software as "technical means to social end" is very close to IEEE's of "advancing technology for the benefit of humanity". The beauty of GNU is that it guarantees freedom of access to the source code to improve the program and to release improvements to the public.

In experimenting with GnuCash recently I found it quite easy to use, at least no more difficult than IEEE's NetSuite. The difference is that GnuCash handles internationalized dates and currencies, and the application's menus and pop-ups have been translated into 50 languages. Online banking operations can be set up for transferring money and paying the bills. Extensive budgeting and reporting facilities are available, so Section treasurers can easily manage the financial health of the Section and provide reports to the Section executive committee.

What about exporting the data into NetSuite for annual financial reporting to make the job of a Section treasurer easier? This would require some development work but the main mechanism on how to do it is described in the GnuCash documentation. Surely we have plenty of capable software engineers within our members to develop such a translation module. If you would like to participate in this project, or have any comments or other ideas, let me know.

Adam Jastrzebski
Region 8 Section Vitality coordinator
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LIFE MEMBERS

MGA backs plan to help Sections re-engage with Life Members

AT its mid-summer meeting on 23 June, the Member and Geographic Activities Board (MGAB) endorsed the recommendations of a special Task Force set up in 2017 by the IEEE Life Member Committee (LMC). This Task Force had been asked to find ways of improving the membership experience of Life Members and other groups of older members such as retirees, and to help them get more engaged in IEEE.

Life Member Affinity Groups (LMAGs) are the administrative focal point of Life Member activities in a Section but only 13 Sections out of the 57 in the Region have actually formed one. This means that the resources provided by IEEE for LMAG activities are not available to members in the other 44 Sections. The irony is that many Sections already have sufficient Life Members to form a viable LMAG, especially if long-serving non-Life Members are included.

There is an underlying concern that older members will leave unless they can see some personal benefit in remaining as members. The Task Force recommended that Sections need to take the primary responsibility to address this problem by improving the status of, and the services provided, for older members. Demographic indicators show that the cohort of members approaching the end of their professional career is expected to grow significantly in the next decade. IEEE needs to take action if it wishes to retain the loyalty of this group.

The first step would be the appointment of a coordinator to look after their interests, and who would also be an ex-officio member of the Section executive committee. Secondly, the awareness among fellow members of their activities and achievements needs to be increased by a dedicated web page on the Section website. This would be specifically designed to inform older members of meetings and events, and other items of interest. Thirdly, it should be made easier for Life Members to maintain contact with the volunteer leadership, to deal with queries related to membership issues.

The launch of this new policy has already begun in Region 8 with a pilot project aimed to dramatically increase the active involvement of older members. Its success will depend on the recruitment of a new generation of volunteers to raise the profile of older members, who have a great deal to offer from their experiences drawn from a career in engineering, industry, government service or academia.

Life Members in Sections without an LMAG should work together to submit a petition for the formation of a new LMAG. Details and the petition form can be found at: www.ieee.org/communities/forms_petitions.html

Just one Life Member (as designated organiser) and five other higher grade members are needed to sign the initial petition, together with an outline plan of the activities proposed. The process is quite simple and further assistance is available if required.

Charles Turner

HISTORY ACTIVITIES

Scotland to host HISTELCON 2019

HISTELCON 2019 will be held on 18-19 September in the Technology and Innovation Centre of Strathclyde University, in the centre of Glasgow.

It will be the sixth HISTELCON, and the first to be held in UK and Ireland Section. Scotland is a particularly relevant location given the many historical innovations in technology that took place there and its founding role in the Industrial Revolution during the 18th and 19th centuries.

HISTELCON aims to bring together those professionally involved in technology history (including science and technical museum curators and academics in History of Science departments) as well as practising engineers from industry, government, military establishments and academia for whom technology history is of interest and relevance but not a part of their job or research. The intention is to keep the cost of attendance very low, and also to attract engineering students and young professional engineers whose target may be to 'invent the future' but who cannot be expected to do that well without an awareness and understanding of past achievements, inventions and ideas.

A conference organizing committee is being assembled in the conventional manner to include international representation. Offers to help with the technical program and the reviewing of papers are invited, and the Call For Papers will provide details on the main theme and structure of the conference.

Tony Davies

Euro robots hailed by IERA

GERMAN and Dutch companies were singled out for top honours at the IERA (Innovation and Entrepreneurship in Robotics and Automation) Awards at the end of June.

KUKA Deutschland's LBR Med, a collaborative robot assistant for medicine and research, and Netherlands-based Lely International's Discovery 120 Collector, a robot that cleans solid floors in the dairy industry, were described as "world-class products" by International Federation of Robotics (IFR) president Juni Tsuda. A third winner was US-based Perception Robots' Industrial Self-Cleaning Gecko Gripper.

The IERA Awards are jointly sponsored by IEEE Robotics and Automation Society (IEEE/RAS) and IFR.

REG-8 says: "Build a digital strategy and turn your company into a market leader"

CONGRATULATIONS to Matsiko Joshua (Uganda Section) who won last issue's free prize draw and will already be reading his personal copy of *The Singularity*, a book of technical essays on the human implications of artificial intelligence.

Launching a startup? Apply some disruptive thinking to your business

WIN this book in our FREE PRIZE DRAW!

"EVERY assumption the business world has previously made about digital is wrong," says Tom Goodwin. "Incremental change isn't good enough!"

In this book, published in April 2018, the author shines a light into the future by exploring technology, society and lessons from the past, offering practical advice on building a digital strategy for your business.

To have a chance of winning a free copy of *Digital Darwinism*, send us an email at r8news@ieee.org with the subject line *Digital Darwinism*, giving your name and IEEE Section – nothing else! The final date for receipt of entries will be **31 October**. If you are the lucky winner, we will contact you directly to request your postal address so we can send you the prize.

RULES: This is a free prize draw. No purchase is necessary. Names and email addresses of entrants will be stored securely for the purpose of this prize draw only and removed from our system as soon as the prize has been accepted by the winner. Contact details will not be used for any other purpose or shared within IEEE or with any other organization.

BONUS PRIZE for IEEE volunteers!

Have you ever been asked to "take the minutes" during committee meetings but don't know where to start? This little book explains how to do it like an expert. For a chance to win a free copy, email your name and IEEE Section to r8news@ieee.org with the subject line *Taking Minutes of Meetings* by **31 October**.

Volunteers are the lifeblood of IEEE and their hard work should be given public recognition and celebrated by fellow members.

AWARDS AND RECOGNITION

Give credit where it's due (or put yourself forward)

WHY should anyone be giving an award to someone? As a nonprofit volunteer organization, IEEE recognizes in this way the efforts of its volunteers and the contributions of its members within its fields of interest.

IEEE volunteers often give up their personal time to participate in activities, so it is important to thank them for the sacrifices and show appreciation for their efforts. Usually award candidates do more than what is generally expected of them in whatever position they have worked in – candidates who in fact went the extra mile! And this is the reason we believe they deserve to be recognized and to be awarded.

Applying for an award or asking to be nominated brings a multitude of personal and career benefits. Putting together an award application can help you reflect on your skills and career progress. It may push you to become more competitive and productive by filling gaps in your work and increasing your visibility. Seeking out senior colleagues who will nominate you can help you build a strong support base for the future. Competing for awards also creates an opportunity to receive useful feedback about your work and how you are perceived from those who nominated you or the awards committees.

An award can be given to an individual or a group of people, or to a Section, Technical Chapter, Student Branch, Student Technical Chapter or Affinity Group.

In Region 8 every year we give out many awards, the most important being:

- ☐ Region 8 Volunteer Award
- ☐ Region 8 Outstanding Section Award (categories: Small, Medium and Large)
- ☐ Region 8 Chapter of the Year Awards (categories: Small, Medium and Large)
- ☐ Region 8 Student Branch Chapter of the Year Award
- ☐ Clementina Saduwa Award
- ☐ Region 8 Women in Engineering Section Affinity Group of the Year Award
- ☐ Region 8 Women in Engineering Student Affinity Group of the Year Award
- ☐ Region 8 Outstanding Women in Engineering Section Volunteer Award
- ☐ Region 8 Outstanding Women in Engineering Student Volunteer Award ieeer8.org/category/member-activities/women-in-engineering/awards-women-in-engineering/guidelines/region-8-outstanding-women-in-engineering-student-volunteer-award
- ☐ Region 8 Young Professionals Exceptional Volunteer Award
- ☐ Region 8 Outstanding Young Professionals Affinity Group Award
- ☐ Region 8 Student Paper Contest
- ☐ IEEE madC (Mobile Application Development Contest)
- ☐ IEEE Student Branch Web Site (contest)
- ☐ Larry K Wilson Student Volunteer
- ☐ Exemplary Student Branch
- ☐ and many others…

These awards run to an annual schedule with a typical submission deadline on 15 February each year. Submissions must be made using the Region 8 Award Portal at: ieee-r8.fluidreview.com.

But these are not the only awards we have in IEEE. Every Section, Chapter, Student Branch and Affinity group can establish their own awards to honour, encourage and reward worthy volunteers. IEEE as a whole has many more awards from MGA, EAB and its Technical Societies, the most prestigious being the IEEE Medal of Honor, given annually during the IEEE Honors Ceremony.

In order for IEEE to be able to identify, evaluate and honour the people that have worked hard and rightfully deserve it, it needs the help of its volunteers. If you know someone that you believe deserves to be recognized for his or her hard work and important contribution, please do not hesitate but do come forward and make a nomination.

Costas Stasopoulos

IEEE FOUNDATION

Philanthropic partner on track to hit $30m target

EARLIER this year Charles Turner, Life Member representative to the IEEE Foundation Board of Directors, convened a small gathering of current and past Region 8 leadership volunteers. They hosted Stan Retif, chief development officer of IEEE and the IEEE Foundation, to discuss the mission and work of the Foundation, its exciting plans for the future, and its impact on Region 8.

The Foundation has evolved significantly over the last five years. It serves as the philanthropic partner of IEEE and has adopted a more proactive approach to Advancing Technology for Humanity.

One of the hallmarks of that new approach is the first-ever major fund-raising campaign undertaken by IEEE. Its objectives are outlined as follows.

Many of the world's most pressing challenges require innovations in engineering. Additionally, the need for engineers, STEM professionals and engineering students is increasing globally as important work for technologists increases. These challenges include:

- More than half of the world's population still cannot access the internet.
- More than a third of the world's population do not have access to adequate sanitation.
- More than one billion people have no access to reliable electrical power.

Such challenges are daunting but solvable, with the IEEE committed to playing a full role. IEEE has identified a number of strategically important initiatives that will help meet the pressing global challenges cited above.

IEEE Foundation is leading a special campaign across IEEE's expansive network to raise awareness, forge partnerships and generate the required financial resources, with a current $30m goal. To date, in excess of 52% of the goal has been achieved. The objective is to meet the goal by IEEE Day 2020.

Watch this space in subsequent issues as we detail some of the specific programming designed to impact Region 8, IEEE and society at large. It is only through your support that we are able to meet these challenges.

Stan Retif
Chief development officer
IEEE Foundation
ieeefoundation.org

Teacher training event will spread across four continents

AFTER two successful years with more than 1,250 teachers having been trained in 16 Region 8 Sections, TISP Week makes its return this October. For TISP Week 2018, Region 8 and Region 10 will join forces to host a huge educational event which will spread across four continents: Europe, Asia, Africa and Australia.

TISP Week is a Region 8 initiative focused on organizing multiple local Teacher In-Service Program workshops across Europe, Middle East and Africa, training school teachers to build innovative lesson plans based on inquiry-based science education practices to their classrooms. For more information about this initiative, visit the website at tisp.ieeer8.org or email us at easc@ieeer8.org.

VIENNA CALLING!

IEEE raises awareness of AI at top levels of decision-making

It has been a busy time at IEEE's European Technology Centre in Vienna, Austria, as it contributes ethical strategies for artificial intelligence among other key areas of IEEE expertise to the European Commission

Clara Neppel, senior director at IEEE's Vienna office, speaks on a panel on the 'Future of blockchain, AI and IoT' at the Intercontinental Blockchain Conference, held at the European Parliament. Also on the panel was Ramesh Ramadoss from the IEEE Blockchain Initiative.

Clara Neppel (left) with Catelijne Mueller, European Economic and Social Committee rapporteur on AI.

Jean-Luc Dormoy from IEEE's European Public Policy ICT Working Group speaks at a European Parliament event on 'Intelligent Innovation and Society: Policy Implications of AI and Big Data Analytics'.

Raja Chatila (centre) from the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems after his presentation on 'Artificial Intelligence and Ethics'. To the left are MEP Pilar del Castillo and Lucilla Sioli, director of Digital Industry at DG CNECT.

The Vienna Office also coorganized an interactive session 'Incorporating Ethical Considerations in Autonomous & Intelligent Systems (A/IS) – Policy & Industry Requirements in the Algorithmic Age' with TU Delft Design for Values Institute and IEEE Standards Association in June.

THE topic of Artificial Intelligence (AI) is high on the EU political agenda. Earlier this year, the European Commission (EC) has published its "Artificial Intelligence for Europe" Communication (europa.eu/rapid/press-release_IP-18-3362_en.htm) and 25 European countries signed a Declaration of Cooperation on AI (ec.europa.eu/digital-single-market/en/news/eu-member-states-sign-cooperate-artificial-intelligence).

The IEEE Vienna office is also active in raising awareness on IEEE and its initiatives in this area. Since the ethical aspects are an important part of the EU AI strategy, these initiatives are very much appreciated, IEEE being mentioned positively both in high level meetings, as well as in two EC documents:

1. The European Group on Ethics in Science and New Technologies (EGE), which is an independent advisory body of the President of the European Commission and is in charge to draft AI ethics guidelines for the Commission by the end of the year, has cited IEEE in its *Statement on Artificial Intelligence, Robotics and 'Autonomous' Systems* (ec.europa.eu/research/ege/pdf/ege_ai_statement_2018.pdf):

On page 13, it is mentioned that "Some of the most prominent initiatives towards the formulation of ethical principles regarding AI and 'autonomous' systems have stemmed from industry, practitioners and professional associations, such as the IEEE's (Institute of Electrical and Electronics Engineers) policy paper on 'Ethically Aligned Design'."

2. The European Political Strategy Centre (EPSC), which acts as the European Commission's think tank, has also positively mentioned IEEE in its note *The Age of Artificial Intelligence* (ec.europa.eu/epsc/sites/epsc/files/epsc_strategicnote_ai.pdf):

On page 12, the EPSC notes IEEE's work on ethical standards for AI, recognizing its "initiative to recommend policy guidelines to foster an ethically aligned design of Artificial Intelligence", and more specifically "to have an inclusive approach to cultures, for example drawing insights from Buddhism or Confucianism to address the risk of designing an ethical code resting only on Western values and principles."

Gaining acceptance

We applied to be part of the EC's High Level Expert Group on Artificial Intelligence on behalf of the European Public Policy Committee and IEEE SA. There were more than 600 applications for 52 places. We are proud to announce that we were accepted and will be represented by Raja Chatila, chair of the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems.

The tasks of the Expert Group will include:

- Steering the direction of the European AI Alliance.
- Advising the EC on AI-related challenges and opportunities through recommendations that will feed into the policy development process, the legislative evaluation process and the development of a next-generation digital strategy.
- Support the Commission on further engagement and outreach mechanisms.
- Propose AI ethics guidelines to the Commission.

IEEE also contributed to the Stakeholder Summit on Artificial Intelligence in Brussels, organised by the European Economic and Social Committee (EESC), together with the European Commission. The summit brought together 400 businesses representatives, academia, workers, citizens, policy makers and NGOs to discuss the next steps to advance the EU strategy on AI.

Decision makers

With respect to working directly with the European Parliament, we were invited to participate at several events addressing this topic (see photos on the left of this page). The societal impact of AI was also discussed during the European Parliament Science and Technology Options Assessment Committee's visit to the IEEE NY HQ on 10 May.

Another notable event was the invitation from MEP Brando Benifei (Italy) for IEEE to participate in 'Data Driven Innovation & AI: ePrivacy, Free Data Flow and High Performing Computing'. This involved discussion with consumers' associations, industry representatives, European Commission officials and MEPs.

In conclusion, IEEE is well positioned to be a strategic partner in the framework of the upcoming European initiative on artificial intelligence, recognized for its contributions both from the technical as well as societal point of view.

Making vehicles smarter through integrated tech

THE European Commission's long-term goal of zero road fatalities by 2050 ("Vision Zero") is based on a Safe System Approach. One of the pillars is 'Safe Vehicles'. Vehicles, in particular cars, will be safer because they will be smarter. Their smartness results from communication and cooperation with each other and the infrastructure properly integrated with Advanced Driver Assistance Systems (ADAS).

To begin with, Europe will deploy the initial package of Cooperative-ITS Services to enhance road safety in 2019. Road operators and OEMs rely on proven IEEE 802.11p standardized technology for short distance ad-hoc communication in the 5.9GHz spectrum between vehicles and between vehicles and roadside infrastructure. Fully automated driving will then be introduced step-by-step based on the functional evolution of ADAS.

Expert panel

In May, an IEEE workshop 'Autonomous Cars for Automated Driving' gathered experts and interested stakeholders from industry, academia, and standards organizations. IEEE-SA informed about IEEE standards-related work for Intelligent Road Transportation and challenges related to Ethically Aligned Autonomous Systems.

Distinguished guest speakers from academia and industry addressed hot topics that included 'Future Vehicle Control for Automated Driving', 'Digitization of Traffic Control, 'The Role of Road Operators' and 'Safety and Real-Time Challenges in Automated Driving'. A panel discussion highlighted technical challenges, the value of standards and the need for future standardization. The panellists also exchanged views about the future role of road operators, mobile network operators and map service providers.

Workshop panellists: (from left) Yu Yuan, Anton Fuchs, Bernd Datler, Stefan Poledna and the moderator Robby Simpson.

IEEE delegation and TTTech employees in Vienna: (from left): Yu Yuan, Hermann Brand, Robby Simpson, Charlton Adams, Gerald Fritz, Marina Gutierrez Lopez, Gerhard Koza, Thomas Berndorfer and John Kulick.

Sensitive to time

TTTech hosted a delegation of the IEEE-SA Board of Governors at TTTech's headquarters in Vienna. The highlight of the visit was the demonstration of one of the largest Time Sensitive Networking (TSN) networks worldwide, developed by TTTech together with B&R Industrial Automation. TSN is based on IEEE 802.3.

The demonstration was followed by a fruitful discussion about the importance of open, transparent, consensus based standardization and on how to improve the efficiency of standardization processes to meet time to market requirements.

IEEE Standards Association sets out to promote engagement across Region 8

IEEE Standards Association (IEEE-SA) held its Board of Governors meeting in Vienna in May. This coincided with meetings and events to engage with the local technology community focusing on the digital transformation in the automotive, health and manufacturing sectors (see above). A team also went to Budapest for a university event with the local Section.

In June, IEEE-SA held its Standards Board meetings in The Hague and held several events and meetings in The Netherlands. One highlight was the 'Incorporating Ethical Considerations in Autonomous & Intelligent Systems (A/IS) – Policy & Industry Requirements in the Algorithmic Age' workshop, jointly organized with TU Delft's Delft Design for Values (DDFV) Institute. Speakers came from the European Commission, industry, academia and other institutions, and fuelled strong multi-stakeholder dialogue at the event.

IEEE-SA also partnered with Turkey Section on two events. The IEEE Standards Summit in Istanbul took place at Medipol University and focused on two technical domains, IEEE 802 and eHealth standards. The Electronic Communications Standards Summit in Ankara was hosted by BTK (Bilgi İletişim ve Teknolojileri Kurumu), the telecommunications authority, and covered wireless communications and smart manufacturing.

In July, the IEEE Standards University 'Mars Space Colony: A Game of Standardization' was run as part of Young Professionals in Space, held in Barcelona. Also in July, IEEE-SA took part in Region 8's Student and Young Professional Congress in Porto.

For more about IEEE-SA's global engagement activities, go online to standards.ieee.org/develop/intl. For more details on IEEE Standards University, see standardsuniversity.org/game.

David Law
Region 8 Standards coordinator

Milestones: update in R8

SEVERAL proposals for future IEEE History Milestone plaques are active within the Region, each at different stages of their official approval process.

- Italy Section: *First Studies on Ring Armature for Direct-Current Dynamos, 1860-1863*. This proposal is nearing completion having been approved by the IEEE Board of Director during its June meeting in New Brunswick. As we went to press, a date for its dedication ceremony had yet to be announced.
- Benelux Section: *The birth of Wi-Fi, 1987*. Now that it is at an advanced stage, it is hoped that this proposal will be accepted during the History Committee meeting in October so that it can put forward for approval during the Board of Directors' meeting the following month.
- Poland and Germany Sections: *Czochralski Method of Crystal Growth, 1916*. This proposal for twin plaques to be installed in Warsaw and Berlin is also awaiting action by the History Committee at its October meeting.
- Spain Section: *Salva's Electric Telegraph, 1804*. Details of this proposal were recently passed to its designated advocate and are currently being examined.
- Hungary Section: *Budapest Metroline No.1, 1896*. Awaiting advocate approval before moving on to the next stage.
- Germany Section: Invention and First Demonstration of Radar, 1904. Submitted just as we went to press and is now also awaiting advocate approval.
- UK and Ireland: *The active shielding of Superconducting MRI Magnets, 1986*. Proposal ready for submitting to advocate for examination.
- UK and Ireland: Standardisation of the OHM as the unit of electrical resistance, 1861-1867. Ready for submission pending appointment of an advocate.

Read more about IEEE Milestones at: goo.gl/YQ8d56

IEEE SIGHT leads humanitarian track on health and technology

THE International Nurses Conference which took place in Kitgum, Northern Uganda, from 9-12 May featured a humanitarian track led by IEEE SIGHT (Special Interest Group on Humanitarian Technology). During this event, a range of diverse topics were addressed by different speakers and as a result it was possible to supplement health and technological knowledge with relevant social-economic and political inputs/presentations.

Overall, the conference brought together a gathering of experts of a mixed nature and these included nurses, clinical officers, pharmacists, medical laboratory technicians, civil servants and policy makers.

During the experience-sharing expert session, one of the issues discussed was to "how to utilize humanitarian approaches in identifying and managing unforeseen epidemics in communities". The presenter noted that epidemics are part of life and society and therefore we should make preparations to face them. Communities should evaluate and utilize humanitarian technologies and approaches, seek guidance from health workers and generally keep touch with a broad range of experts to ensure they will employ best practice when the time comes.

A plenary talk on how the community, engineers and health workers could work together to save lives at birth examined the importance for all players to put their heads together in order to come up with technological solutions to promote sustainable development. To do this successfully the presenters observed that it is important for each stakeholder to unpack their expertise and integrate it with others to achieve all-round solutions that respond to community needs.

An example of this is Neopenda's collaboration with IEEE SIGHT to develop and utilize vital signs monitor technology. This brought together IEEE engineers, health workers from Ugandan hospitals, community members and the Neopenda team. Such collaboration encourages the development of solutions that can be sustained for the benefit of humanity within communities in a long-lasting manner.

Lwanga Herbert
Uganda Sub-Section chair

Reflecting on achievements and making new plans

UNITED Arab Emirates Section held its annual Ramadan Iftar gathering on 4 June. Section chair Essa Basaeed welcomed both executive committees of 2017 and 2018 to the meeting, including Section vice-chair Fatma Taher and Balqees Al Daghar, chair of UAE Women In Engineering.

The annual gathering is as much a social occasion as a business one, presenting a great chance for all members to meet up in person as well as talk about the Section's achievements and plans. Members discussed what had been achieved in 2018 so far, and updated everyone on the status of future initiatives and activities. Volunteers also raised some issues about enhanced collaboration between members.

The Section recognizes and values the important role of members as volunteers in order to promote IEEE objectives in the UAE. It is the continued hard work of volunteers that makes a Section energetic and beneficial to its members and attracts new adherents. It is important that these dedicated volunteers are encouraged to be recognized for their contributions. This acknowledgement also serves to promote examples for others to follow.

To this end, Dr Basaeed took the opportunity of the Ramadan Iftar gathering to distribute Volunteer Recognition Awards, awarding members for their extraordinary contributions to the Section and their innovative ideas and initiatives. All members were thanked for their continuous efforts and encouraged to push for more achievements this year.

Soha Jawabreh

High profile for Section at Digital Africa Conference

NIGERIA Section took its membership drive to the recent Digital Africa Conference 2018 at the Shehu Musa Yar'Adua Center in Abuja, Nigeria.

Running from 5-7 June, the annual Digital Africa Conference and Exhibition, now in its sixth year, is Africa's premier consumer technology show. As such, DAC provided the perfect platform to showcase the IEEE brand and spread the institute's excellent work in advancing technology for humanity, while networking with top government officials, entrepreneurs and industry experts.

The Section was active on stage at the conference too. For the discussion topic 'Exponential Education for the Development of Africa Focus Area', the panel of experts included Nigeria Section's vice-chair Oyewole John Funso-Adebayo, representing IEEE Africa Area chair Gloria Chukwudebe.

An IEEE booth was set up in the exhibition area to showcase the institute and the various projects in which the Section is currently active, such as capacity building, Action for Industry, SIGHT and upcoming conferences.

More than 100 visitors were recorded at the booth, among whom were the Nigeria minister of communication technology Adebayo Shittu, senator Ben Bruce (representing Bayelsa, East of Nigeria) and several director generals of agencies in the country. New members were recruited and existing members were assisted with their renewals.

Over its three days, the conference focused on the great achievements in science and technology in Africa as well as charting a course for the future. Africa has the world's oldest record of human technological achievement, after all, yet few seem to be aware of these accomplishments because the continent's history, beyond that of ancient Egypt, seldom receives the public exposure it deserves.

Abdullateef Aliyu
Nigeria Section MD officer

HVDC and interconnectivity discussed over dinner

SAUDI Arabia Section in collaboration with Saudi Scientific Society for Electrical Engineers (SSSEE) hosted a technical dinner meeting in April on Energy Trading Across MENA and Beyond. The meeting was addressed by Ahmed Al-Ibrahim, the CEO of the Gulf Cooperation Council Interconnection Authority (GCCIA), and who has been affiliated with GCCIA for more than ten years since joining as director of operation and maintenance in 2007. The meeting was attended by more than 100 engineers from different affiliations.

The presentation began with a brief introduction and a background of the establishment of GCCIA, followed by the regulations and governing authority of the Gulf countries' interconnections. Additionally, the presentation addressed the major challenges of connecting a 50Hz electrical grid to a 60Hz electrical grid, achieved through the installation of a state-of-the-art High Voltage Direct Current (HVDC). The presentation also included a brief on the application of HVDC.

Having won the attention and total engagement of the audience, Ahmed Al-Ibrahim concluded by opening the floor for questions for ten minutes. This was followed by the formal dinner for all attendees.

Meeting the challenge of connecting grids: GCCIA's Ahmed Al-Ibrahim.

Distinguished history lecture was always on the radar

THE Aerospace and Electronic System Chapter of Switzerland Section organized a lecture at ETH Zürich on 13 June on the history of radar by IEEE Distinguished Lecturer Dr H Griffiths of University College London.

Well-attended by 60 participants, the talk looked at how radar has developed over the years, a theme aided by access to wartime documents from the Public Records Office in Kew, UK, which has provided a rich source of new and more complete information. A selection of British and German contributions were presented, including the first radar of Hülsmeyer in Germany and the Chain Home (CH) as the first air defence system. Dr Griffiths described the Klein Heidelberg, a German bistatic air defence system that was decades ahead of its time.

He explained the use of Chain Home to detect V-2 rockets and hence the first ballistic missile defence system radar, 'Big Ben'. He also investigated the impact of the famous Bruneval raid and the subsequent technological analysis of the German equipment, including the interrogation of the captured radar operator.

Freundliche Grüsse

Quartz Milestone re-dedicated in French hopes to attract more public attention

SOME 16 years after the first IEEE Milestone in Switzerland was dedicated – celebrating the development of the quartz electronic wristwatch – Switzerland Section unveiled a companion French-language version of the 2002 plaque at the very location where the pioneering work took place.

The original plaque had been installed at the Astronomical Observatory of Neuchâtel on the occasion of Switzerland's National Exhibition Expo.02, as reported in *IEEE Region 8 News*, February 2003, pp6-7.

On 22 February this year, the new bronze plaque was unveiled on the historical building at Rue Breguet 2, where Centre Electronique Horloger (CEH) was founded in 1962. It was here that the first quartz wristwatches with dedicated silicon integrated circuits were developed and produced, reaching worldwide recognition at the Chronometric Contest announcement of 15 February 1968, exactly 50 years earlier. On this date, it was publicly revealed that the electronic quartz wristwatches submitted by CEH had broken all accuracy records, beating wristwatches that had been submitted by challenger Seiko.

The founder of CEH, Roger Wellinger (later to become IEEE Region 8 Director 1969-1970), succeeded in building up an outstanding staff of scientists and engineers by hiring a dozen or so expatriate Swiss engineers working in the USA and experts in electronics technology. The whole venture was funded with 25 million Swiss Francs over the five years 1962-67 by two companies within the Swiss Watch Industry (Ebauches and Fédération Horlogère Suisse) which wanted to overcome the leading technology of the time – Accutron wristwatches, owned and controlled by Bulova Watch Inc of New York.

Right: Rue Breguet where CEH was founded.

Below: The Milestone was unveiled by (from left) Mario El-Khoury of CSEM, Hugo Wyss and Maria Alexandra Paun of IEEE Switzerland Section, and Jean-Nathanaël Karakash, Neuchâtel Canton Councilor of State.

Especially noteworthy is the achievement of Kurt Hübner, who joined CEH directly coming from the Shockley Semiconductor Laboratory in Palo Alto, where in 1958 he had replaced the outgoing 'Traitorous Eight' engineers led by Bob Noyce (who founded Fairchild Semiconductor the previous year). He and his team at CEH's wafer fab were able to produce continental Europe's first silicon monolithic integrated circuit as early as July 1964, just four years after Fairchild Semi produced the first planar silicon integrated circuit (with four transistors on the same chip) in Mountain View.

Thus the microelectronics revolution in Switzerland started at CEH, securing for the country a leading position in the field of very low power CMOS chips, continued today in Neuchâtel by its heirs CSEM and EM Microelectronic-Marin SA in the field of ultra low power chips for wearable devices.

Translated into French and situated more prominently, the new plaque is expected to attract attention from the wider public to an important Swiss technological landmark .

France Section roundup: 5G workshop, biomed awards and Sensors Chapter

France Section chair Frédérique Vallée speaks at 5G workshop held at Nokia's Paris-Saclay campus.

TO follow up last year's successful 'Data science and energy' event, a second industry workshop was organized 30 March, hosted by Nokia in Paris and devoted to 5G. More than 130 people of various backgrounds attended, representing manufacturers, network providers universities, researchers and government agencies. During this one-day workshop, keynote speakers from manufacturers providers as well as from infrastructure design companies, discussed the challenges presented by 5G.

Two further workshops are planned. A first one on 'Blockchain and Energy' is being organised for 11 October; the second will deal with autonomic vehicles and will run by the end of the year.

■ France Section was invited to participate in two events in Tunis, Tunisia, at the end of June. Jean Gabriel Remy participated in both as representative of the Section. Tunisia Section celebrated its tenth anniversary on 28 June, and since Remy had played important role in its installation, he was invited to speak at the celebrations. The following day, he attended the first meeting of Africa Council, along with IEEE President Jim Jefferies and Region 8 Director Margaretha Ericsson.

■ The Section's EMBS Chapter, the French Society of Biological and Medical Engineering (SFGBM) and the Alliance for Biological and Medical Engineering (AGBM) held their annual Biomedical Thesis Awards during the SFGBM General Assembly in Paris on 30 May. The four finalists had earlier presented their work at an oral session at the PARCC, at the European Hospital Georges Pompidou.

■ The first IEEE France Sensors Chapter workshop was held on 18-19 June in Nancy. The workshop program reflected a wide spectrum of research topics on emerging technologies in sensors, electronics and microelectronics, IoT, materials and biomedical, building bridges between various research fields. The 75+ participants included students, researchers, university professors and companies working in the field of emerging technologies in sensors, electronics, materials, microelectronics and communications. France Sensors Chapter was established earlier this year.

■ At the beginning of June, we had the pleasure of welcoming Signal Processing Society Distinguished Lecturer Dr Wing-Kin to deliver three presentations to members of our Chapter. Topics covered included 'Hyperspectral Unmixing in Remote Sensing: Learn the Wisdom There and Go Beyond' and 'MIMO Transceiver Designs and Optimization: Beyond Beamforming and Perfect Channel Information'.

Sweden summer school throws light on signal processing hot topic

IEEE Signal Society Sweden Chapter organized a five-day training workshop on 'Light Field Data Representation, Interpretation and Compression' at Mid Sweden University in the beautiful city of Sundsvall, Sweden, from 28 May to 1 June. The event was co-sponsored by the Signal Processing Society.

The training school was a post-graduate education event for engineers, computer scientists, researchers, PhD students and other interested individuals seeking to further their knowledge of the topic. The main purpose was to create an innovative training environment to promote the learning of a interesting element of signal processing, providing the facilities and expert lecturers for training internationally competitive researchers in these fields.

Sweden Section was represented by its chair, Samarth Deo, who spoke about IEEE and its benefits and activities in Sweden and globally. There were plenty of interesting questions from attendees who came from all around the world.

We congratulate Mårten Sjöström, professor in Signal Processing, and Roger Olsson, senior researcher (PhD) in Telecommunications, for organizing the summer school and thank them for inviting the Section to give a presentation at the event.

Bahrain SIGHT smart home tech raises living standards

WORLDWIDE, there are an estimated 191 million people classed as immigrants. People migrate from one country to another for a variety of reasons but it has become obvious that immigration can put strain on a host country's infrastructure. Bahrain Section's SIGHT Group is taking the initiative to contribute in solving this delicate issue and raise living standard of poorer residents.

The project involves changing a traditional home into a smart one to reduce expenses and even provide some income. Installing solar panels, a thermal energy collector, a greenhouse and a fish farming tank all fall into this remit.

For the very poorest in society, access to even a small amount of electricity converted from sunlight can reduce grid consumption and save money. Solar panels could provide modest funds too if surplus energy is connected back into the state power network.

A solar thermal collector heats water passing through it which is stored in a tank to be used for the hatching of poultry, cooking, fermentation, yogurt industry, washing and showers, for instance.

The greenhouse could be built on the roof of a house, potentially a great source of food, and possibly income, in providing fresh fruit and vegetables. With respect to a fish farming tank, the Ministry of Agriculture and Fisheries can advise in operation and management of finfish hatchery in an aquaculture farming tank, which can be situated in the back yard of the house.

Through this project, the SIGHT Group using technological support to lessen the dependency by low-income families on financial aid.

Adel A H Abdulla
Bahrain Section chair
ewh.ieee.org/r8/bahrain

Distinguished lecturer looks at FTV 'eye gaze correction'

IEEE Fellow Yo-Sung Ho, director of Realistic Broadcasting Research Center Gwangju Institute of Science and Technology (GIST), Korea, visited Slovenia Section in July. At the invitation of Slovenia's Signal Processing and Circuits and Systems Chapter, he delivered a lecture at the Faculty of Electrical Engineering, University of Ljubljana, to give us an insight into the latest progress made at the 123rd Moving Picture Experts Group standardization meeting that was being held in the city.

Prof Ho outlined what will eventually become the H.266 standard and centred his talk around Free-viewpoint TV (FTV), which provides the viewer with a free selection of the scene view angle. He demonstrated the technique of eye gaze correction using 3D video processing techniques; this solves the classic problem during video conferencing in which the eyes of participating parties never quite connect because they are watching the screen instead of the camera situated adjacent to it.

The use of two cameras and clever image processing synthesizes a virtual view in which each person seems to be looking directly at the camera. This eliminates the awkward feeling of lack of eye contact during video conferencing session.

Yo-Sung Ho (second right) gave an update from the 123rd MPEG standardization meeting

WOMEN IN ENGINEERING

Outstanding WIE volunteers receive awards in Turkey

THIS year sees the launch of the IEEE Region 8 Women in Engineering Awards. Winners of these inaugural awards were announced back in February and were due to receive their awards in person at a ceremony taking place as we went to press during the International Leadership Summit – Tunisia (wiels.ieee.tn). This flagship event is one of the most important WIE events in Region 8, running from 10 to 12 August. Here's the list of winners:

- Region 8 Outstanding WIE Section Affinity Group of the Year: **WIE Tunisia AG**
- Region 8 Outstanding WIE Student Affinity Group of the Year: **WIE Yeditepe University AG, Turkey**
- Region 8 Outstanding WIE Section Volunteer of the Year: **Ilhem Kallel, Tunisia**
- Region 8 Outstanding WIE Student Volunteer of the Year: **Özgenur Sevgili, Turkey**

Congratulations to the winners for being an inspiration to IEEE volunteers in general and to WIE members in particular. We are proud of you! Congratulations to Tunisia and Turkey Sections as well.

The second edition of the Region 8 WIE Awards will take place in 2019, so make it your time to shine! We look forward to your nominations.

Stay tuned to our online channels: Facebook @R8WIE, Instagram @r8wie and our website wie.ieeer8.org. You can also drop us an email at r8wie@ieee.org.

Keep shining, inspiring and leading!

Youmna El Bitar, Region 8 WIE co-ordinator

SYP 2018 attracts 300 to Porto for keynotes and workshops

FROM 25-29 July, University of Porto Student Branch hosted this year's IEEE Region 8 Students and Young Professionals Congress in the beautiful city of Porto, Portugal.

Held every two years, SYP Congress is the largest student event in Region 8, gathering IEEE Student and Young Professional members from all Sections throughout the Region. Its primary goal is to enhance and foster the engineering sense and capabilities through different activities, exchanging experience and knowledge, and encouraging international networking through lively social activities.

The congress brought together 300 participants from 49 Sections and 55 countries. They had access to an extensive program featuring keynote talks from key speakers such as Celso Martinho from Sapo, Bev Bachmayer and Manuel Dias from Intel and Microsoft, and Koen Bertels from TU Delft; and sessions with IEEE leaders including IEEE's CEO and President, the Region 8 Director, and both Student Activities Committee (SAC) and YP representatives.

The program offered a choice of 50 workshops across several themes from soft skills to technical. Attendees also had the opportunity to visit major labs and factories related to engineering in Portugal, including Bosch. A number of participants presented their work in a special Speed Talk session designed to increase members' engagement throughout the congress.

On the social side, the Porto team prepared a host of activities for attendees, including networking by the beach while enjoying the sunset. A beautiful and elegant gala dinner was held in the Palácio da Bolsa (Stock Exchange Palace) in Porto's historical centre. On the final night of the congress, a Multicultural Dinner involved each Section contributing something traditional and representative of its country.

Overall, SYP 2018 was a resounding success, winning positive feedback from attendees for its challenging technical activities, enjoyable social events and unforgettable venues.

Vitor Minhoto and ***Inês Trigo***

Hands-on skills project turns YPs into full stack engineers

'FULL Stack Engineer Project' is a new program developed and prepared by Bosnia and Herzegovina Young Professionals Affinity Group. The main idea of this program is to provide more activities and more benefits for young professionals in industry.

The program consists of six technical workshops focusing on the power and energy sector, where young professionals will have an opportunity to learn new software or develop new skills which may help them in the next stage of their careers or to find the first job. These workshops are also a great opportunity for networking.

The first workshop was held at the Faculty of Electrical Engineering, University of Sarajevo on 14-15 July. More than 20 members of IEEE BiH Young Professionals had a chance to learn all about light designing and Dialux, the world's leading software for planning, calculation and visualisation of indoor and outdoor lighting.

Further workshops planned to take place this year include: AutoCAD electrical design, Revit BIM workshop, EPLAN Electric P8 workshop, power system protection workshop, and an electrical measurements workshop (IRT, CCTT, PQM, etc).

Many young engineers are already very interested to be part of this project and that can be seen in the YP membership increase in Bosnia and Herzegovina. A positive feedback from the first workshop has motivated the Bosnia and Herzegovina YP AG to work even harder to complete this exciting project.

Saudi YPs learn the refinery things in life during three-part workshop

SAUDI Arabia YP organised a workshop for young engineers at Ras Tanura Refinery, owned by Saudi Aramco. The one-day event was led by highly experienced specialists from the company who explained the electrical system at the refinery. The day was split into three sessions.

During the first session, it was explained how the electrical equipment at the refinery (for generation, transmission and industrial distribution) was designed, operated and maintained.

The second part of the workshop focused on the engineering and operation of the refinery; more specifically, on the ways that electrical engineers can operate and maintain a reliable electrical system that avoids any electrical disturbances.

The control and process engineering was discussed in the third session. The main goal was to educate participants about the chemical processes in the refinery.

At the end of the workshop, the Saudi Arabia YP chair thanked to the experts for their help and all attendees received certificates for their participation.

Mashhour Alqahtani
Saudi Arabia YP chair

Virtual Martians achieve consensus on standards

SEVENTEEN young professional engineers attending the 2018 Young Professionals in Space conference at the Polytechnic University of Catalonia, Barcelona, Spain, on 17- 21 July took part in IEEE Standards University's 'Mars Space Colony: A Game of Standardization' workshop.

The purpose of the Mars Game is to educate engineers about what standards are, and how consensus can be reached in developing a standard, given conflicting individual goals. Participating is also a lot of fun and exposes attendees to techniques of consensus-building that are useful life skills applicable in group decision contexts.

The two teams eventually reached a consensus on their four standards development tasks, although they took very different routes to get there. One team argued with passion; the other was almost clinical. In neither case was it easy to reach a consensus because the individuals were briefed with roles to play that had conflicting goals. The team that argued with passion eventually discovered a procedural trick – suspend the rules – to enable them to make decisions where it was hard to reach the required 75% approval. The other team methodically debated and eliminated individual options until they reached 75% consensus.

Prizes were distributed by IEEE Standards University: mugs for everyone, pennants for individual contributions, and backpacks for the chairs and (in the opinion of the Games Master) the "coolest participant".

The game was facilitated by Adrian Stephens, former chair of IEEE 802.11 and IEEE Standards Association board member.

For more information about IEEE Standards University including the Mars Space Colony: A Game of Standardization', please go to: www.standardsuniversity.org/game.

Adrian Stephens

{ IN BRIEF }

■ Young Professionals Affinity Group in Bahrain will host Middle East Students and Young Professionals Congress (MESYP) in 2019, hoping to build on its success last year in hosting the first IEEE Gulf Cooperation Council (GCC) SYP, which attracted more than 300 participants.

■ Serbia & Montenegro Young Professionals Affinity Group expects to continue its vigorous start to activities since its initial meeting at the Power Electronics conference in October 2017. Encouraged by receiving its first guest from Wollongong University, Australia, the group will do its best to maintain momentum throughout 2018 and reach out to other Young Professionals groups within Region 8 and beyond. The plan is to reach full capacity at EUROCON 2019, to be held in Novi Sad, while exploiting the fortunate circumstance that Novi Sad has been named European youth capital in 2019.

National Engineering School of Sfax (ENIS), Tunisia

Training the techniques of offensive security

THE CyberSecurity Student Chapter at ENIS, in collaboration with Tunisia Section and the National Agency for Computer Security (ANSI), organised its first I-Protect workshop at the Mathaba Royal Salem Hotel in Sousse, Tunisia, on 18-20 March (cybersecurity-enis.ieee.tn/iprotect).

The three-day event attracted more than 60 participants from 20 Tunisian engineering schools. The attendees were a mix of graduate and undergraduate students along with a few IEEE Young Professionals, who were all extremely interested in learning about offensive security.

Tunisia Section chair Habib Kammoun opened the event with a presentation on IEEE and its benefits (notably those of student transition and elevation) and the principal IEEE activities organised on international, Region 8 and national levels. Maha Charfeddine, IEEE Cyber Security counselor and a software engineering professor at ENIS, introduced the workshop theme, followed by talks by Sofien Maatallah and Walid Bensaid from the National Agency of Information Security (ANSI).

The workshops included a preparation for the Offensive Security certificate, taught by one of the most qualified engineers who explained in detail concepts such as ethical hacking, footprinting and reconnaissance, enumeration, system hacking, sniffing, social engineering, denial-of-service, session hijacking, hacking webservers, hacking web applications, SQL Injection and hacking wireless networks.

The final day of training included the presentation of certificates to attendees and closing remarks by Maha Charfedine.

We would like to express our gratitude to our IEEE partners Computer Society, IEEE Tunisia Chapters and WIE Affinity Groups; and our main partners the National Agency of Information Security (ANSI), Primatec, and the venue host Marhaba Royal Salem.

Aristotle University of Thessaloniki, Thessaloniki, Greece

Four cities, two countries: the ultimate learning road trip

AUTH Student Branch successfully organised an international educational trip to Belgium and the Netherlands on 19-26 April. We have arranged similar educational visits in the past – Geneva, Lausanne, Manchester, Leuven and Eindhoven – but this was the first trip on such a scale, encompassing four cities across two countries.

The main purpose of this eight-day tour was to put students of the university's Electrical & Computer Engineering Department in contact with the educational systems of these countries and to interact with their schools, universities, institutes, organizations and companies.

The 19 participants, accompanied by Prof Alkiviadis Hatzopoulos, began with visits to the Interuniversity MicroElectronics Center (IMEC) and Katholieke Universiteit Leuven (KUL), both in Leuven, Belgium. In The Netherlands, they visited the European Space Agency's European Space Research and Technology Centre (ESA – ESTEC) in Leiden,

Technische Universiteit Delft (TU Delft) in Delft and, finally, Technische Universiteit Eindhoven (TU/e) and NXP Semiconductors, both in Eindhoven. They had the chance to explore a number of laboratories and two clean-rooms: one in IMEC and the other in TU Delft.

A special thanks goes to IEEE Greece CASS/SSCS Joint Chapter, which partially funded the trip, and to the Student Branch at KU Leuven for its generous hospitality.

Kosmas Tsiakas
Student Branch chair
Periklis Karavangelis
Head organiser

Federal University of Technology Owerri, Nigeria

Conference topics promote professional awareness

'TECHNOLOGY Today' was the theme of FUTO Student Branch's Student Professional Awareness Conference 2018, held at Federal University of Technology Owerri on 7 April. The conference attracted 50 attendees, all from the university.

Conference topics included 'Artificial Intelligence & Big Data Analytics: Benefits & Risks', 'Smart Grid Systems: A New Grid Revolution', 'Leadership Competencies for a New Society', and 'The Role of Employable Skill-sets: A New Paradigm Shift'. These sessions were presented by the keynote and guest speakers Kennedy Okafor, Samuel Okozie, Ihejirika Allwell Chinedum and Osuala Nnamdi.

A competition was held during the conference by chair-elect Ezeoguine Chuka Dean, the winner being Okpala Benedic. Also, the winners of FUTO Student Branch's Student Paper Competition 2018 were announced:

Nnamani Valentine Kosisochukwu won the top prize with his paper 'Future of Mobile Commerce', while the runner-up spot was taken by Duru Levi Odinakachukwu thanks to his work on the topic 'Internet of Things'. Beside the certificates for both, the winner gets to attend all FUTO Student Branch activities for a year free of charge while the runner-up gets a 50% discount.

Abdulmalik Osikena Abdullahi
Student Branch chair

King Fahd University of Petroleum and Minerals, Saudi Arabia

Nanotech under the microscope

THE new executive committee of the most active Student Chapter in Saudi Arabia, KFUMP SB, organised several events during the first four months of this year.

A short course on Nanotechnology, held on 28 March, attracted more than 50 students. Topics covered included an introduction to the main concepts in nanotechnology, the principles of quantum mechanics and optical effects, the characteristics of nanomaterials backed up with specific examples, an introduction to low-dimensional materials, and the key 2D materials (such as graphene and TMDCS) and their application in sensing and electronics. The impact of nano-electronics on our daily life was discussed, as well as an overview of transistor fabrication (from sand to chips) and micro-electromechanical systems and their applications.

A seminar entitled 'Arduino vs Raspberry Pi' was held on 4 April, attended by more than 20 participants, while 12 students took advantage of the opportunity to visit the Gulf Cooperation Council Interconnection Authority facilities on 22 March.

Two other events were organised by the Student Branch in the first quarter. A two-day course ran on 13-14 March focusing on the topic of renewable energy, attracting 175 students. Participants were able to find out more about solar photovoltaic energy and wind power technology.

Earlier in the month, on 7 March, 60 engineering students attended an IoT seminar.

The interest generated by these events has become viral and attracted many new student members.

ELECTRIC TOURIST

Was Queen Elizabeth I's physician the father of electrical engineering?

Colchester, United Kingdom

SOME 220 years before Hans Christian Ørsted's discovery of electromagnetism, an English medical doctor in the late 16th century court of Queen Elizabeth was experimenting with magnets when he inadvertently identified electricity. He even invented the name for it.

William Gilberd (sometimes spelt 'Gilbert') was born in England's oldest Roman town, Colchester, in 1544 and subsequently studied medicine in Cambridge before beginning practice in London in the early 1570s. He rose in prominence to become personal physician to the Queen and briefly also to her successor James I before dying suddenly, possibly of plague, in 1603.

When he was not treating ailing monarchs, Gilberd regarded himself as an accomplished astronomer and spent his free time devising experiments in magnetism to explain hitherto unexplained forces that guided the planets and stars.

His amateur master work on magnetism, published in 1600 as *De Magnete*, posited groundbreaking theories such as the Earth itself being magnetic (at the time, no-one knew why a compass works), the Earth rotates once a day while the stars remained fixed (rather than vice versa), and that some substances carried a kind of fluid power of attraction that was somehow related to but not exactly the same as magnetism.

He referred to this power as having "attractive" properties akin to those in amber. 'Amber' in Classical Greek is *elektron*, and in Classical Latin *electrum*, from which he devised a New Latin expression to mean "like amber": *electricus*.

The book outlines Gilberd's experiments with amber to produce static electricity, which he referred to as *electrical charge*, and describes his invention of the *versorium* – a crude electroscope and essentially the first electrical measuring instrument.

Photo: Alistair Dabbs

Left: Gilberd's statue at the front of Colchester's town hall.

Below: Gilberd's home, situated just off one of the shopping streets in the town centre, its Elizabethan features still intact.

It would be another half-century and the scientific revolution before Thomas Browne began using the term *electricity*, which he derived from Gilberd's book.

Even 415 years after William Gilberd's death, Colchester remains boldly proud of its otherwise unsung and unfamous son. Situated in Essex just 57 miles east of central London, this market town honours Gilberd's existence and legacy with several historical sites and memorials.

Not only was he born here, his remains were interred here too in Holy Trinity Church, a building that retains much of its original Saxon construction, along with a marble monument to the man himself.

Such is his local reputation, Colchester's current town hall, erected at the beginning of the 20th century, features a highly visible and larger-than-life statue of William Gilberd set into its ornate Victorian front fascia.

History buffs may also be interested to note that his distinctive Elizabethan home also survives, well-preserved in a small but publically accessible courtyard in the town centre.

Just think: if Gilberd hadn't written his book in Latin, we might all be working today in *amberical* and *amberonic* engineering.

Photo: Alistair Dabbs

Have *you* visited somewhere off the beaten path within Region 8 that has historical or cultural significance to IEEE's fields of interest? Let us know!