

IEEE FOOTHILL NEWSLETTER

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BI-MONTHLY NEWSLETTER

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NEWSLETTER
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March ExCom/OpCom Meeting

BY: MAX CHERUBIN
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The March ExCom/Opcom meeting was held last March 9, 2021, via BlueJeans at around 6:30 pm and by 7:10 pm we started the meeting with 20 attendees in total. For the PES Election result, we have a new PES chair, Dr. Nanpeng Yu as reported by our section secretary Gerald Herder.

Section and Committee

Kimberly Mosley reported about our membership status. So far we don't have a senior elevation for this month and we have a total of 815 members.

Osman updated our Facebook and LinkedIn accounts for easier updates and notifications. It is an easier way as well to reach more people or members and share updates about the group.

On educational activities, Osman Ceylan has been working with David Gonzalez regarding the Rialto Unified School District on a teach the Teacher-Student boot camp.

Student Section and Updates

CSU-San Bernardino is working on workshops and looking for speakers. They were also looking for volunteers or IEEE members to help with their mock interviews held on April 19, 2021. During the meeting, we also had Sean Hamilton a former president of CSU-SB who joined the meeting and is now in Tennessee and shared updates about his work.

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Technical Societies and Committees

The MTT/APS talked about their virtual Student Design Competition was held in association with European Microwave Week. There were 13 teams from 9 countries who applied for it and results were announced during the closing ceremony. The winner is the team from Politecnico di Torino from Italy and received the price worth \$1,500.

Our ED/CAS Society chapter is reaching out to local members regarding talks and meetings. They were coordinating with Dr. Nanpeng Yu regarding the IEEE Student Engineering Team Challenge 2021.

This challenge is focused on students from socio-economic disadvantaged communities with the goal to stimulate interest in the STEM fields. They created as well a website to understand further how this competition works. If you go to the website you will be able to see the forms, details and resources, organizers, etc. have been as well updated.

Affinity Groups

Women in Engineering are still working on meeting plans and restarting the group along with help for new officers. They're still working to have a secretary and treasurer. The numbers are not really good to support even having a leadership team and most members are students.

Foothill Consultants Network Meeting update last March 3, 2021, members were able to share a brief technical background and they shared about Small Business Innovative Research (SBIR).

Aside from that, they agreed to move the meeting date to every last Wednesday of the month to avoid DeVry class schedules. Zoom meeting videos will be made available to participants upon request. The conference will be postponed to fall 2021 or spring 2022 because of Covid-19.

April ExCom/OpCom Meeting

The April ExCom/OpCom Meeting last April 13 was held via BlueJeans at around 7 pm. The meeting from last month has been reviewed. The chair wanted to have a face-to-face meeting by the last quarter of the year.

Section Committee

On membership development. There has been an improvement in the membership count. From around 700+ last month, now it reached 815 members in total.

Osman reported that he simplified the main page of our website where we can see the announcements and upcoming events. We had good numbers as per followers on Facebook and LinkedIn.

Student Section and Updates

The USB-San Bernardibo will have a Hackathon Event which will be held virtually on April 23, 2021.

USBSB-WiE had an EPA (Environmental Protection Agency) last March 10 and they had 3 speakers and 16 students attended the said event. The speakers discussed their career journeys and informed students about the pathways to the internship program as well as discussing USA Jobs requirements and tips. Their next event will be the Faculty Research Seminar on April 30, 2021.

UCR just had a 36-hr premium hackathon that occurred via Hopin last April 9-11, 2021, which was a collaboration between IEEE-UCR and ACM-UCR. It was attended by roughly 500 participants and they were 55 hacks that were submitted and were judged by 55 judges. They just selected 13 new board of officers for the next academic year.

CalPoly will have an Annual Symposium Presentation on April 30.

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Technical Societies and Committees

The MTT/APS had a "Quantum Computing with Microwave" last April 13, 2021, via Webinar by Prof. Joseph Bardin from the University of Massachusetts Amherst and a Research Scientist with Google Quantum AI. In this talk, Dr. Bardin described the use of microwaves in quantum computing, with a focus on the superconducting qubit technology used to show that a quantum computer is capable of post-classical computation. On April 28, 2021, they will have a talk about the "Impact of Power-rail Noise on Clock Jitter", and on June 30, 2021, they are planning a virtual presentation with Dr. Jon Martens (Distinguished Microwave Lecturer) on the topic of microwave measurements for 5G.

The Nanotech Council already updated its website and sponsorship document with regards to "IEEE Student Engineering Team Challenge 2021".

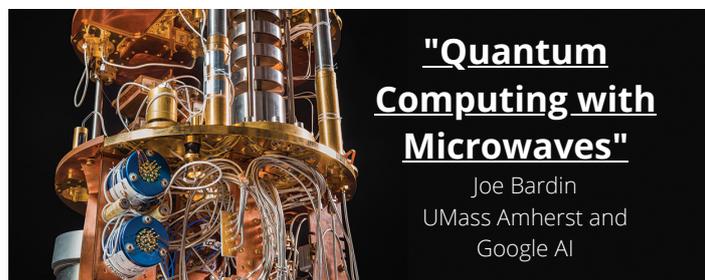
The Computer Society is still in the works for their event on May 12, 2021, about "How to Build an 8-Core Hyper-Threaded Computer on a Budget" with their speaker Dr. Morantz.

Educational Activities

EA will have a "Teach the Teachers" session for two consecutive Mondays of April (19 & 26). There will be 15 Science Teachers from various middle schools in Rialto Unified School District who will participate. On May 8, 2021, will be the "Teach the Kids" session, and 30 students both from 7th-8th graders from Rialto Unified School District will attend. On June 7-11, 2021, will be the Summer Enrichment Program, and 30 middle school students from the same district will attend.

Affinity Groups

Foothill Consultant's Network Monthly Meeting is now changed to every last Wednesday of each month and the next meeting will be on April 28, 2021.



By: Scott Wedge

On the morning of April 13, many members of the Foothill Section attended the MTT webinar "Quantum Computing with Microwaves". The presentation was given by Dr. Joseph Bardin, a Professor at the University of Massachusetts (Amherst) and Research Scientist at Google Quantum AI. Professor Bardin's research group at UMass develops low-temperature integrated circuits for applications in radio astronomy and the quantum information sciences. At Google, he leads efforts in developing ICs for cryogenic control and measurement. His talk was broken into two main components.

The first described the potential of using quantum bit (qubit) technology to perform computations well beyond that possible in classical computation. Quantum processing involves arrays of coupled qubits that exist in a coherent superposition of their basis states. This makes it possible to encode and manipulate dramatically more information. For example, the 53 qubits of the Google Sycamore Processor can encode a $9.0E+15$ bitstring, as opposed to just 53 bits in the classical digital logic paradigm.

The second component of the presentation described some detailed aspects of transmon superconducting qubits based on Josephson junction loops, and their control and measurement using microwave electronics. These devices operate at a temperature of 10mK and have energy states that can be controlled by microwave signals in the 4-8 GHz range (C-band).

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Manipulating qubit states involves short bursts (10-30ns) of low power (-70dBm) microwaves. Prof. Bardin discussed the many technical challenges of engineering such systems (cryogenic LNAs, RF frequency planning and synchronization, crosstalk, IR drop), but also the tremendous potential and engineering opportunities available as industry and governments push hard towards developing a million-qubit computing machine.

Upcoming Events

April 28, 2021

PES: Deep Reinforcement Learning for Power Distribution System Control

April 28, 2021

IEEE Foothill Consultant's Network Meeting

May 11, 2021

ExCom/OpCom Monthly Meeting

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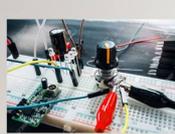
<https://www.linkedin.com/groups/13516173/>

MAKING WAVES
"TEACH THE TEACHER" SESSIONS

 **April 19th & 26th 2021** 

Two consecutive Mondays
15 Science Teachers from various middle schools
in Rialto Unified School District

SUMMER
"TEACH THE KIDS" SESSION

 **May 8th 2021** 

Saturday from 9:00 am to 2:00pm
30 - 7th & 8th graders
in Rialto Unified School District

SUMMER SESSION
SUMMER ENRICHMENT PROGRAM

 **June 7th – 11th, 2021** 

Same 30 middle school students
in Rialto Unified School District

 Bytes & Bots