

IMS2020 Project Connect: Connectivity That Works

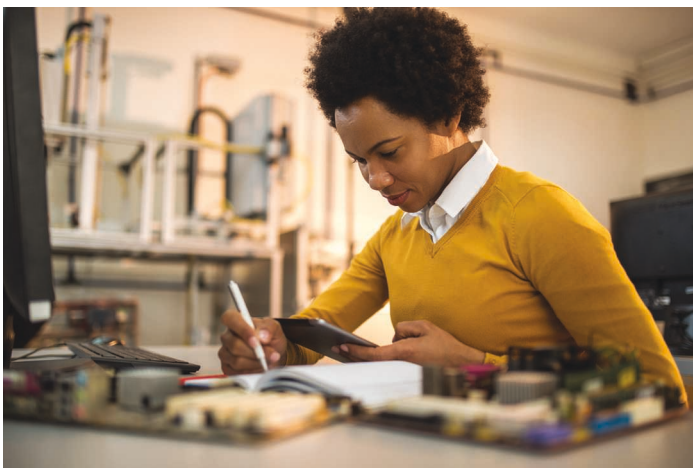
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If you set out to design a program intended to get engineering students excited about microwave engineering, you hope that the participants would answer “Yes” to all of these questions after the event:

- Are you aware of career possibilities in the RF/microwave engineering field/industry?
- Do you have role models in the RF/microwave engineering field/industry?
- Do you have professional contacts and/or mentors in the RF/microwave engineering field/industry?

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- Do you know in which aspect of the RF/microwave engineering field/industry you would like to work?

Welcome to the IEEE Microwave Theory and Techniques Society (MTT-S) International Microwave Symposium (IMS) Project Connect (PC), where these questions are answered with a resounding “Yes!”

Each year, the PC program hosts approximately two dozen under-represented students for four days of

community building and professional development. Most are juniors or seniors in undergraduate programs, along with a smaller cohort of first-year students in graduate programs. The groups, consistently mixed in gender and ethnicity, get an opportunity for direct interaction with fellow PC participants, practitioners, academics, and leaders in the field and of the MTT-S. This interaction is central to

the success of the program, and the integration with IMS is representative of the important role that professional societies can play in developing diverse science, technology, engineering, and mathematics participation. PC has been in operation since 2014 and is sponsored jointly by the National Science Foundation and the IMS Organizing Committee (Figure 1). To date, more than 100 students from 34 universities have participated.



Figure 1. PC participants at the six previous IMSs.

The first few years focused on developing a curriculum for the program to define the field of microwave engineering and showcase the unique role of the IMS for the community. We highlight the following in educating PC students:

- technology advancements made by researchers and practitioners in the community
- professional development opportunities of practicing engineers
- active engagement of industry, engineers, and researchers
- one-on-one interactions among industry representatives, engineers, researchers, and students
- educational opportunities for students at all levels (from bachelor's to Ph.D. degrees) to learn about the field and become proficient.

Over the years, we have learned many things from the various PC contributors and participants. PC students have taught us how to support and meet them where they are. PC volunteers have helped create a sense of community for PC students, shared networks that have become allies to PC students, and offered creative ideas to use cultural development as a vehicle for PC participant team and community building. Of course, this intentional effort is complemented by student-related professional development on effective communications (elevator pitches and networking); positions in microwaves in government, industry, and academia; and careering (life after college).

That said, we are now beginning to see and hear about the effects of the “PC way” on our students and their

careers. Some are now in industry, while others are in graduate programs and nearing completion of their master's and Ph.D. degrees.

For example, one participant from Florida International University (PC class of 2014) went to industry to work for Boeing after completing her undergraduate degree. When asked what role PC played in her education and career choices, she remarked, “IMS Project Connect allowed me to gain the time, means, and access to career opportunities and leaders in the RF and microwaves field. The experiences I had in the program served as the inspiration to pursue a full-time job focused on advanced radar sensors and to continue my studies toward a master's degree in

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Figure 1. The RMS Queen Mary houses W6RO, the first permanent amateur radio station to be installed aboard a museum ship.



Figure 2. The iconic Hollywood sign on Mount Lee is a landmark attraction and is also significant in amateur radio history: it is the site of the first fully automated amateur repeater.

users dwindled, and the station was relicensed as WR6ABN. Today, repeaters in the United States number in the thousands. One is the vanity W6MEP repeater in Santa Clarita that stands as a testament to Gentry and his contribution to amateur radio.

We look forward to seeing you at our exciting event in Los Angeles, where you will view live radio and project demonstrations, learn about the latest advances in the ham community, and network and connect with other hams from across the world (Figure 3)! Appetizers and refreshments will be provided.



Figure 3. Come to the IMS2020 ham radio social event to network and learn about advances in the amateur radio community.

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electrical engineering.” She is currently a flight test engineer and recently completed her M.S. degree at the University of Southern California in 2019.

On the academic side, a 2014 PC student from Morgan State University, an historically black institution, approached one of the organizers recently and indicated he was nearing completion of his Ph.D. degree from Virginia Tech. PC exposed him to different technical topics and a mentor who has guided him in his research and academic career. Two University

of South Florida students, also completing their graduate programs soon, met the 2019 cohort in Boston as attendees to IMS2019. Netra Pillay (PC class of 2015) is a dedicated PC volunteer who now works for a communications company and is extremely active in mentoring PC students and developing concepts for community building and projects for PC student activities. A more recent alumnus has decided to pursue a doctoral program at his undergraduate university after attending PC last year in Boston. The

faculty member who recommended him remarked that the student “was enthusiastic about the experience at IMS, and, because of that, he is now applying to pursue a Ph.D. degree at the University of Illinois at Chicago.”

We invite you to join us in Los Angeles as a volunteer to influence and mentor future microwave engineers. You can email imsprojectconnect@gmail.com for more information about how to help.

