

IEEE Educational Activities

August 15, 2016

Dr. G. Thomas Bellarmine
Educational Activities Chair IEEE Region 3
IEEE 2016

AGENDA

- **University Education**
- **Continuing and Professional Education**
- **Accreditation**
- **Pre-University Education**
- **Representation of IEEE in engineering education matters**
- **IEEE-HKN**

Educational Activities Region 3

1. Educational Activities Region 3 comes under IEEE Educational Activities Board
2. To become a major resource of choice for learners, educators, and education policy makers in all educational matters within IEEE's fields of interest
3. To be the voice of professionals in IEEE's fields of interest on education policy; accreditation; curriculum development; pre-university science, mathematics, engineering and technology education; and continuing education

University Education

- Benefit IEEE members in educational pursuits, the engineering and scientific community, and the general public
- Planning of IEEE educational activities
- Development of guidelines for IEEE representatives to accreditation bodies
- Monitoring of accreditation activities
- Representation of IEEE in matters regarding engineering education

Continuing and Professional Education

- As a student or professional, you have access to:
- IEEE short courses at conferences and section meetings
- Society education offerings
- University and corporate partner programs
- Certificate programs
- Speakers and Consultants
- Online learning resources
- Print materials and conferences
- Many of IEEE education experiences offer Continuing Education Units (CEU) and Professional Development Hours (PDH).

Accreditation

- Part of IEEE's mission
- Significant impact on the content of the curriculum in IEEE's fields of interest and hence, on the future of the profession
- As IEEE's involvement introduces the voice of the profession and its practitioners into the decision making process of educational institutions

ABET Accreditation

- Involved in accreditation of more than 800 programs through ABET, a non-profit and non-governmental accrediting agency.
- IEEE is a founding member of ABET and the largest of its 35 member societies
- In the 2015-16 Accreditation Cycle:
 - 163 engineering program and 38 engineering technology program evaluations
 - Currently more than 344 IEEE volunteers, including program evaluators, are involved in supporting this process

IEEE is lead or co-lead for the following programs:

- Bioengineering, Biomedical Engineering, and Bioengineering Technology
- Biological Engineering
- Computer Engineering and Computer Engineering Technology
- Electrical Engineering and Electrical/Electronic(s) Engineering Technology
- Electromechanical Engineering Technology
- Engineering Management
- Information Engineering Technology
- Laser-Optics Engineering Technology
- Ocean Engineering
- Software Engineering
- Systems Engineering
- Telecommunications Engineering Technology

Global Accreditation Scope

- The Committee on Global Accreditation Activities (CGAA) was established to oversee these activities
- Works to establish and maintain relationships with similar global professional organizations, accrediting bodies and educational institutions

Pre-University Education

- Teacher In-Service Program (TISP)
The Teacher In-Service Program (TISP) enables IEEE volunteers to share their technical expertise and demonstrate the application of engineering concepts to support the teaching and learning of science, mathematics, and technology disciplines. IEEE offers training workshops for its members on how to facilitate in-service programs for local teachers to help them introduce hands-on engineering lessons to their students

Pre-University Education

- <http://tryengineering.org>
- Portal created by IEEE and IBM which combines information on engineering careers with interactive activities.
- Intended for pre-university parents, teachers, school counselors, students, and the general public,
- Explore how to prepare for an engineering career
- Find accredited engineering degree programs

Pre-University Education

- <http://www.trycomputing.org/>
- Free online pre-university computing education website.
- Offers resources to pre-university students, their teachers, school counselors, and parents about computing and related careers.
- Features variety of lesson plans on computing topics as well as tools and opportunities to support and encourage students in computing.
- By the IEEE Computer Society and IEEE Educational Activities Board with funding from the IEEE New Initiatives Committee.

Pre-University Education

- Engineering Projects in Community Service (EPICS) in IEEE
- IEEE Educational Activities has developed an Engineering Projects in Community Service (EPICS) in IEEE program.
- EPICS in IEEE is an IEEE Foundation Signature program that organizes university and high school students to work on engineering-related projects for humanitarian organizations in their local area.

Pre-University Education

- Presidents' Scholarship
https://www.ieee.org/education_careers/education/preuniversity/scholarship.html
- Resource for anyone interested in learning about Nanoscience and Nanotechnology. <http://trynano.org/>
- E-Scientia <http://sites.ieee.org/escientia/>

Community Impact Through Pre-University Education and Outreach



IEEE's Strategic Plan 2015-2020 – Core Values

Pre-University Activities



- Aim
 - **Increase understanding** of engineering, computing and technology (ECT) among the pre-university constituencies
 - **Demonstrate the impact** of technology on the community
- Objective
 - Increase the propensity of young people to select engineering as a career path by **providing programs and products for the adult influencers** in their lives
 - **Increase public understanding** and appreciation of technology

Representation of IEEE in engineering education matters

- IEEE Xplore

<http://ieeexplore.ieee.org/Xplore/home.jsp>

-

IEEE eLearning Library

- https://www.ieee.org/education_careers/education/elearning_library/index.html

Representation of IEEE in engineering education matters

- IEEE CEU (Continuing Education Units) and Continuing Education Providers Program
- Standards in Education
- IEEE Online Professional Development
 - Webinars
 - Podcasts
 - Multimedia tutorials

IEEE-HKN

- IEEE-Eta Kappa Nu (IEEE-HKN), founded in 1904, is the honor society of IEEE, is dedicated to encouraging and recognizing individual excellence in education and meritorious work, in professional practice, and in any of the areas within the IEEE-designated fields of interest.

Who is IEEE-HKN?



Larry Page
Founder of Google



Eric Schmidt
CEO of Google



Steve Wozniak
Founder of Apple



Paul and Irwin Jacobs
Founders of Qualcomm



David Filo
Founder of Yahoo!



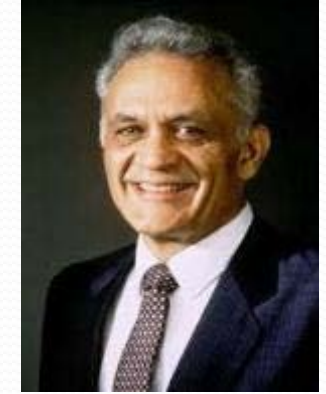
Sabeer Bhatia
Founder of Hotmail



Martin Cooper
Conceived the first
handheld mobile phone



Henry Samueli
Founder of Broadcom



Amar Bose
Inventor of Bose
Speakers

IEEE Educational Activities Board Meeting at New Brunswick, New Jersey

- Recently, I attended the IEEE Educational Activities Board Meeting at New Brunswick, New Jersey on April 7 and 8, 2016. I am going to discuss the outcome of the activities of Educational activities Board (EAB).
- The EAB is divided into the following groups:
- Section Outreach Committee (SEOC)
- Pre-University Coordinating Committee (PECC)
- Membership & Geographic Activities Board (MGA)
- Technical Activities Board (TAB)

IEEE Educational Activities Board Meeting at New Brunswick, New Jersey

- Standard Activities (SA)
- University Resources Committee (URC)
- Continuing Education Committee (CEC)
- Engineering, Computing, Technology Portals Strategic Committee (ECTPSC)
- I attended SEOC committee on April 7 & 8th, 2016.
- The following are results of the discussions held in the SEOC:

SEOC wants (“MUST HAVE”) in the section level (EAC) in the following order:

1. Develop a process for identifying and responding to Section-level educational needs
2. Educate REACs on existing programs, products, and services (at least the basics)
3. Share best practices for communications between REACs and Section Education Chairs
4. Monthly bulletin to REACs
5. Create opportunities to collaborate with other EA committees on projects
6. Create a centralized, dynamic, web-based (executive) dashboard of EA resources

EAB decided to implement the following two results of SEOC

1. Develop a process for identifying and responding to Section-level educational needs
2. Educate REACs on existing programs, products, and services (at least the basics)

Region 3 Section Chairs

If you have done any activities for Educational Activities Board Region 3 at Section Level, please send it to me, Dr. G. Thomas Bellarmine, at t.bellarmino@ieee.org

THANK YOU