IEEE and the Role of Professional Societies

Jim Jefferies, 2018 IEEE President and CEO
University of New Mexico
26 September 2018

IEEE

Brief Introduction

2018 President and CEO

- Background in fiber optic cable development and manufacturing, quality assurance, and supply chain management
- Member of Eta Kappa Nu
- Member of IEEE Board of Directors since 2012
- Currently reside in Colorado, USA

IEEE

The Fuel of IEEE

Who we are

- Forward-thinking technology professionals coming together …

… to discover the next technological innovation,

to develop international standards,

to form communities,

to share research and educate,

in the spirit of collaboration.

IEEE at a Glance

Global Reach

417,000+ Members

160+ Countries

46 Technical Societies & Councils

120,000 Student Members

IEEE

Data as of 31 December 2017

IEEE at a Glance

1,800+ Annual Conferences

4M+ Technical Documents

Technical Breadth

200 Top-Cited Periodicals

1,300+ Active Standards

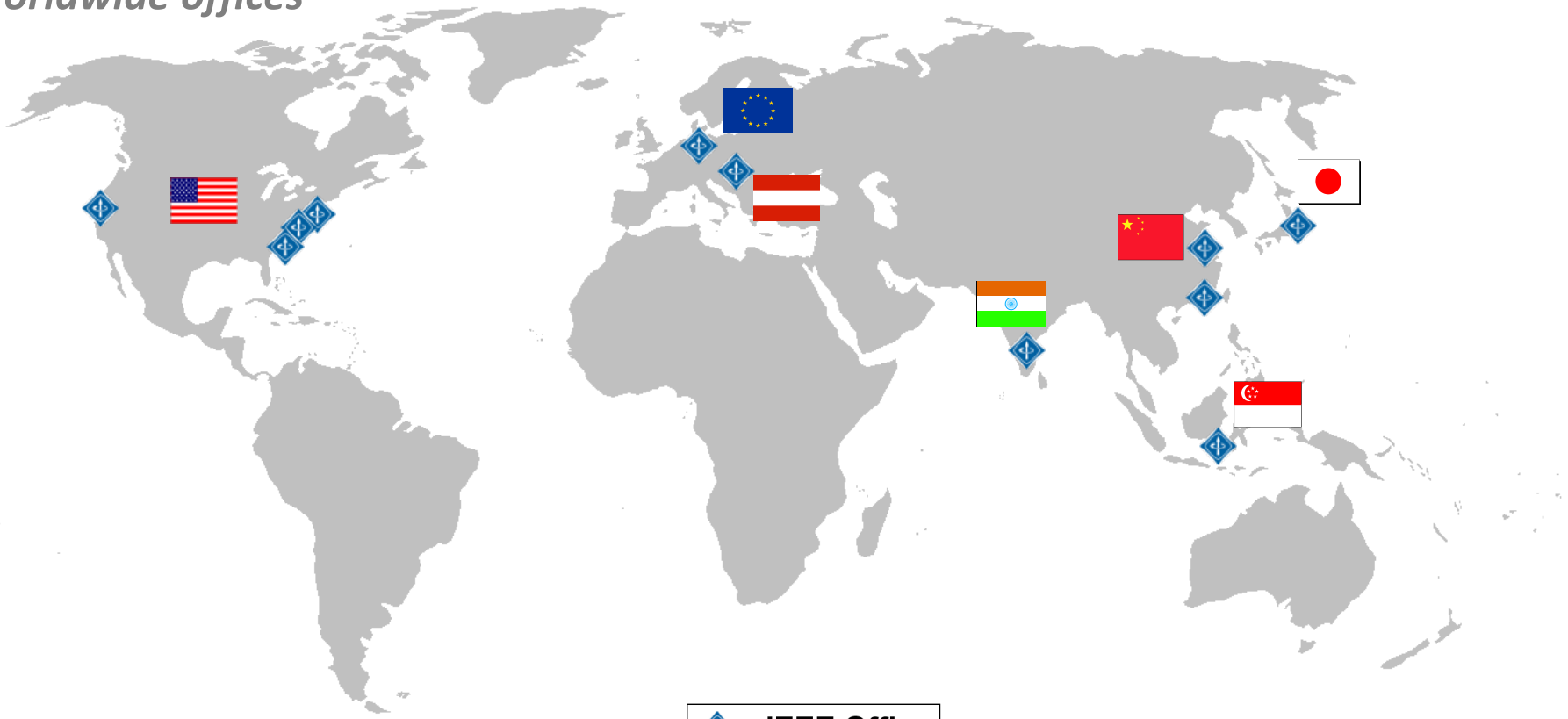
IEEE

Data as of 31 December 2017

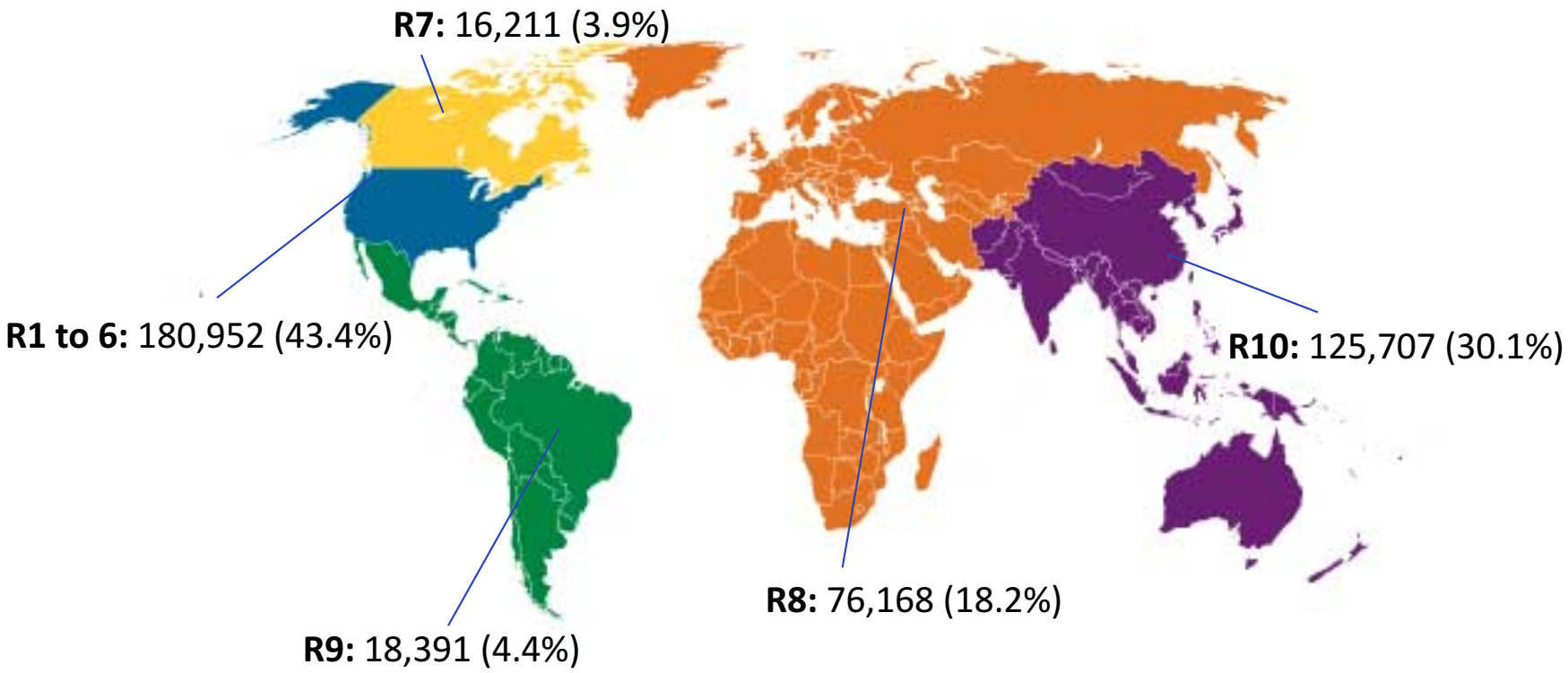
IEEE at a Glance

Global Solutions to Global Challenges

Worldwide offices



IEEE: Engaged Membership of Technical Professionals



TOTAL MEMBERSHIP 2017: 417,429

Data as of 31 December 2017

IEEE: An Organization of Communities

Self-organizing communities

- Geographic Sections
  - Local colleague community
  - Cross-and inter-disciplinary networking through local Section, Chapter, Student Branch activities
  - Local professional and technical activities
- Global Technical Societies & Councils
  - International member coalitions of shared technical areas and fields of interests
  - Sponsor and organize conferences, workshops tutorials, seminars, etc.
  - Develop publications

Engaging Technical Experts from around the World

IEEE's global network provides unique opportunities

- Connect with technical experts shaping cutting-edge research
- Convene with global thought leaders to better understand emerging trends, policy issues, and partnership opportunities
- Shape technical standards with international reach
- Recruit and grow top technical talent

IEEE

Technical Know-How that is Broad and Deep

Access to ideas and innovations developed in other disciplines

- Electrical and electronic engineering, computer science, and beyond:

- Aerospace
- Biomedical Engineering
- Broadcasting
- Circuits
- Communications
- Computing
- Control and Automation
- Electronics
- Environment
- Industrial systems
- Information Technology
- Internet of Things
- Life Sciences
- Nanotechnology
- Optics
- Power and Energy
- Robotics and AI
- Semiconductors
- Smart Cities
- Smart Grid
- Transportation and Vehicles
- **And more…**

New Technology Connections: Future Directions

Fostering cooperative efforts in emerging topics among Societies, Councils, and industry

IEEE BLOCKCHAIN

IEEE DigitalSenses

IEEE SOFTWARE DEFINED NETWORKS

IEEE Smart Cities

IEEE brain

IEEE rebooting COMPUTING

IEEE GREENICT

IEEE BigData

IEEE SYMBIOTIC AUTONOMOUS SYSTEMS™

IEEE 5G

IEEE CYBER SECURITY

IEEE

www.ieee.org/futuredirections

IEEE Standards Association

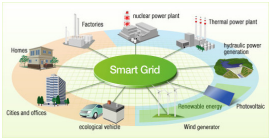
Independent global community

- Enables an open, collaborative, and consensus-building ecosystem that fuels innovation and global technologies
- Drives the functionality, capability, and interoperability of a range of products and services that affect the way people live, work, and communicate
- Leverage the broad spectrum of 40+ technical areas

IEEE 802.11

IEEE 1800

IEEE 1547



IEEE 7000

Technology Policy for the Public Good

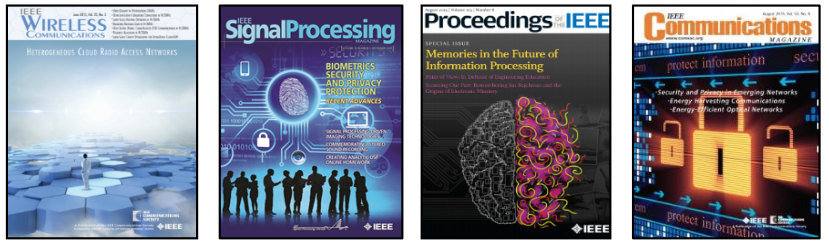
Coordinated activities at the national, regional, and international levels

- Facilitate global collaboration between the IEEE and governments, regulatory, and other industry organizations to work together on important technical issues
- Provides independent and unbiased viewpoints
- Inform policy-makers, IEEE members, and the public of the benefits, risks, and social implications of technology
- Promote discussion of technology-related public policies

globalpolicy.ieee.org

IEEE Publications

A mainstay of cutting-edge knowledge



- **22 of the top 25** journals in Electrical and Electronic Engineering
- **14 of the top 15** journals in Telecommunications
- **3 of the top 5 journals** in Computer Science, Hardware & Architecture Computer Science, Cybernetics Automation & Control Systems Artificial Intelligence
- **2 of the top 5 journals** in Imaging Science & Photographic Technology

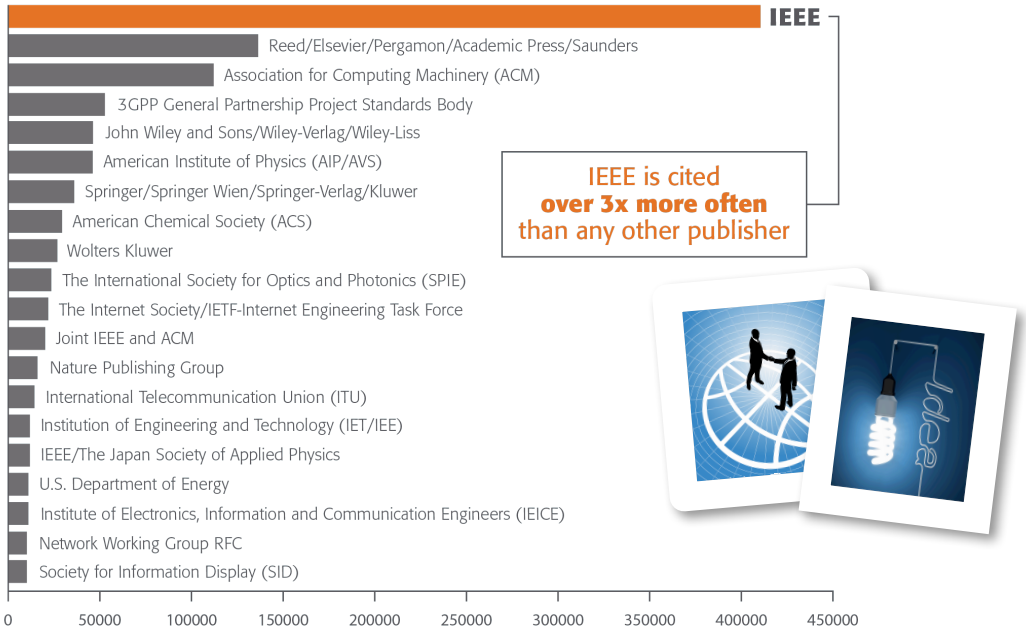
- IEEE Journals are:
  - **#1** in Automation and Control, Artificial Intelligence, Computer Hardware, Cybernetics, Information Systems, Manufacturing Engineering, Theory and Methods, and Telecommunications

IEEE

IEEE Research Powers New Patents

IEEE is the most-cited publisher in new patents from top patenting organizations

- A study of the top 40 patenting organizations ranks IEEE #1 again
  - Over 3x more citations than any other publisher
  - Patent referencing to IEEE increased 896% since 1997
  - The importance of sci-tech literature in patents is rising
  - IEEE research is increasingly valuable to innovators

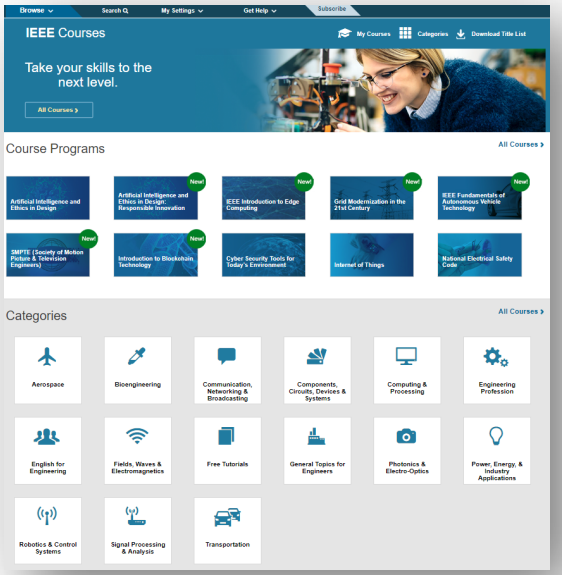


1790 Analytics LLC performed an in-depth analysis of the science references from top patenting firms.

IEEE Educational Programs and Resources

Enabling students and professionals to achieve their goals

- IEEE programs open eyes to the possibilities of today's and tomorrow's technologies with:
  - Career Preparation
  - Continuing Education
  - Pre-University Programs
  - Professional Certification
  - Teacher In-Service Program (TISP)



IEEE STEM Education Programs by the Numbers

IEEE Programs inspire our future STEM workforce

TryEngineering.org Lesson Downloads

23 Million

Free hands-on STEM lesson plans downloaded globally from TryEngineering.org

Teachers Trained through In-Service Program

8,200

Teachers trained globally to offer hands-on classroom engineering lessons through free in-service workshops

Students Reached

575 Million

Students reached with hands-on engineering lessons

IEEE

TryEngineering™ TOGETHER
Powered by IEEE and In2Books

Mentor the STEM workforce of tomorrow

Improving STEM education

Meaningful micro-volunteering opportunity for employees

Helping build diverse future talent pool

IEEE

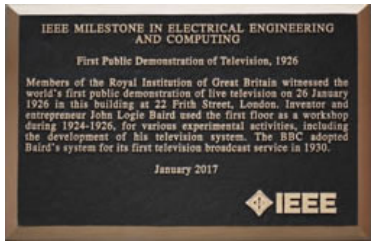
http://tryengineeringtogether.com/

IEEE History Center

Preserving the history of technology

STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY®

- Manages the Engineering & Technology History Wiki featuring oral history and archives preserving IEEE institutional history
- Manage the IEEE Milestones Program, which recognizes events in technological history
- IEEE REACH Program provides free history of technology curriculum to pre-university educators



IEEE REACH
Raising Engineering Awareness through the Conduit of History

IEEE

Humanitarian & Philanthropic Opportunities at IEEE

Doing good brings great returns

- Leverages the strength and reach of the IEEE network to make a difference around the world
- Board-endorsed vision of IEEE members globally carrying out and/or supporting impactful humanitarian activities at the local level

IEEE

www.ieee.org/doing-good

IEEE Foundation

Enabling IEEE's programs through philanthropy

- Inspires Donations to IEEE - Bringing visibility, focus, scale, impact, and relevance to the work of IEEE through philanthropy
- Manages Donations for IEEE - Ensuring effective financial management and strong governance
- Invests in Programs of IEEE - Turning the donations into action and impact through IEEE programs

IEEE Foundation

IEEE

www.ieeefoundation.org

The Value of Membership

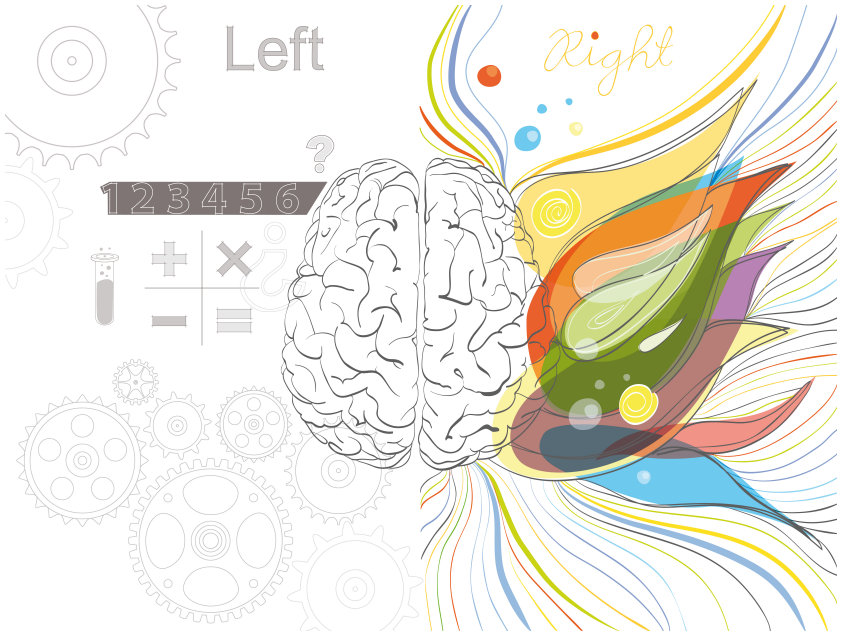
- **Engage** with IEEE's activities and initiatives
- **Inspire** participation from fellow colleagues
- **Celebrate** our achievements and all that IEEE does for the benefit of humanity

Leading for the Future

Skills Needed to Make a Difference

Essential for employment and advancement

- Strong communications skills
- Teamwork
- Critical thinking
- Imagination and entrepreneurship



Never Stop Learning

Look for ways to improve

- Emerging technologies
- Professional development
- Continuing education
- Learn something new every day!

Take Risks

Be bold in seeking new opportunities

- Ask for opportunities
- Share your experience
- Expand your skills
- Recognize your strengths

Promote Yourself

Be your strongest advocate

- Know your strengths and weaknesses
- Develop your “Me” speech
- Get out there!
  - Become a subject matter expert
  - Volunteer
  - Blog
- Be honest, be authentic

Networking

Make the connection

- Build visibility
- Connect locally and globally
- Face-to-face and online
- Stay connected

IEEE Collabratec™

IEEE

Leading for the Future

Technology continues to reshape the world we live in

- Cross-functional, multi-discipline, and international
- Diversity and inclusion
- Trust and respect
- Develop the solutions

Questions?


شكرا
рахмат
danke
謝謝
ngiyabonga
teşekkür ederim
Баярлалаа
спасибо
faafetai lava
mersi
kia ora
barka
welalin
tack
spas
dank je
misaotra
paldies
grazzi
mahalo
tapadh leat
vinaka
спасибі
blagodaram
matondo
kiitos
dankie
nanni
nandri
dhanyavad
thank you
gracias
хвала
asante
manana
mauruuru
hvala
köszönöm
aciú
dankon
akun
obrigada
tenki
murakoze
bedankt
bayarlalaa
gràçie
djiere dieuf
tau
mochchakkeram
enkosi
dziękuję
дякую
mamnun
chokrane
chnorakaloutioun
gratias ago
gràcies
sulpáy
taiku
go raibh maith agat
sobodi
dėkuji
sukriya
kop khun krap
obrigado
mèsi
sagolun
ありがとう
tanemirt
grazie
arigatô
takk
dakujem
trugarez
didi madloba
najis tuke
terima kasih
rahmet
diolch
dhanyavadagalu
shukriya
mercé
мерси
kam sah hamnida
rahmat
তোমাকে ধন্যবাদ
감사합니다
xièxie
ευχαριστώ
merci