

Towards an Open Science Enterprise: *A Community Organization Perspective*

***Michael Forster, Managing Director, IEEE Publications
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The National Academies of Sciences, Engineering, Medicine***

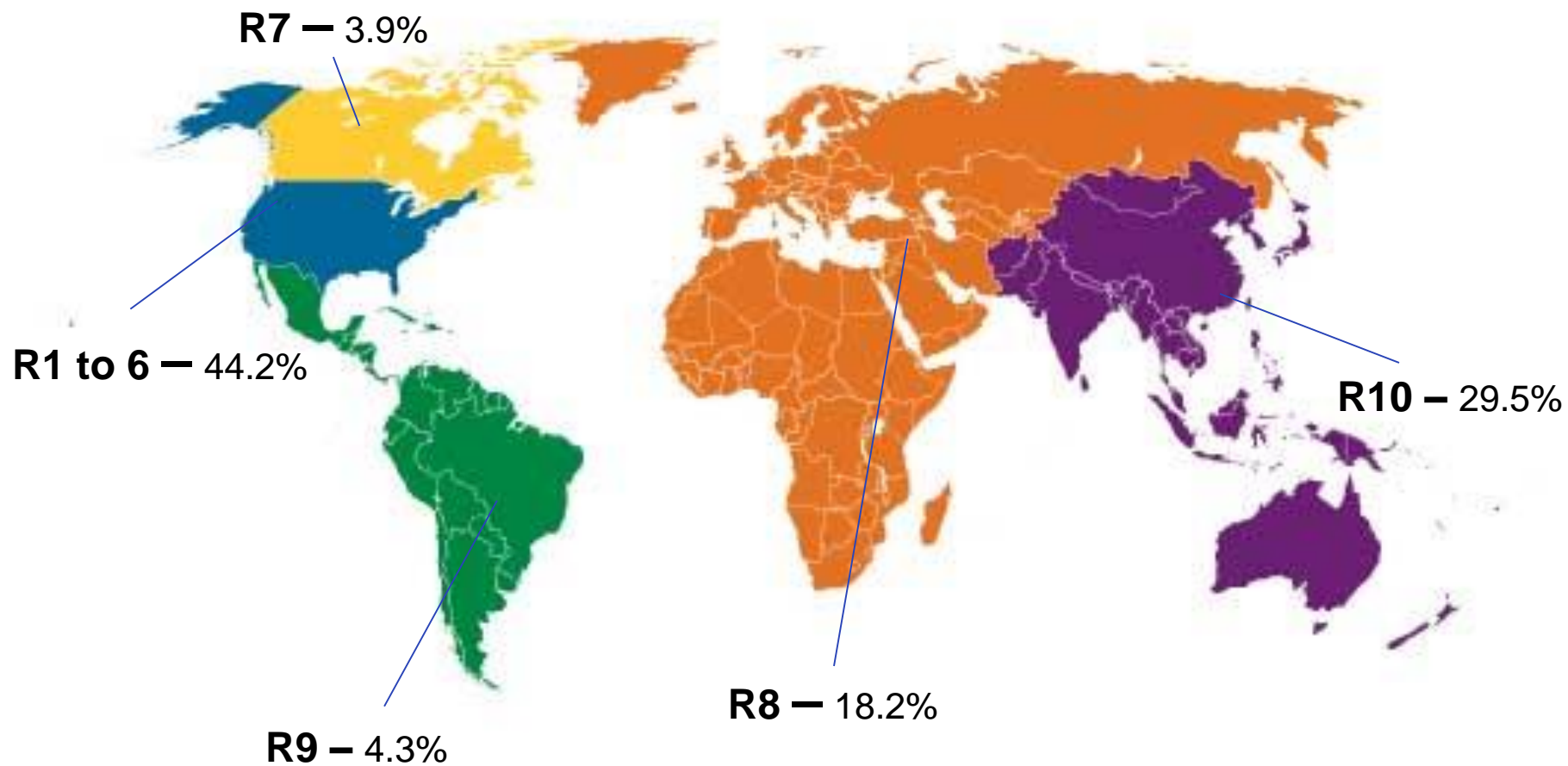


About the IEEE - I

- World's largest technical membership association with more than 420,000 members in over 160 countries
- Not for profit organization "Advancing Technology For Humanity"
- Core areas of activity:
 - Membership organization
 - Conferences organizer
 - Standards developer
 - Publisher of journals, conference proceedings, standards, eBooks, and eLearning
- Community-centered and mission-driven
- Member and volunteer led and managed



IEEE is a Global Community



IEEE covers all areas of technology

OPTICS RENEWABLE ENERGY

SEMICONDUCTORS **SMART GRID**

IMAGING INFORMATION TECHNOLOGY **IOT**

COMMUNICATIONS **AEROSPACE** CIRCUITS

BIOMEDICAL ENGINEERING **ELECTRONICS**

NEXT GEN WIRELESS NANOTECHNOLOGY

CLOUD COMPUTING CYBER SECURITY

VIRTUAL REALITY **AUTONOMOUS VEHICLES**



About the IEEE - II

- Community-centered and mission-driven
- Member and volunteer led and managed, e.g.
 - President and CEO
 - VPs for Publications, Education, Technical Activities, etc.
- Publishing policy and practice governed by members of the community
- Detailed and rigorous standards and codes of practice:
 - maintained by staff
 - overseen by volunteer leadership
 - implemented by the community
- Codified best practices: IEEE Ops Manual
- Principles serving our global community:
https://www.ieee.org/documents/IEEE_Publishing_Principles.pdf



Karen Bartleson
IEEE President 2017



Samir El-Ghazaly
VP Publications 2017



IEEE as a Publisher

How our organization is different

- Community-centric, first and foremost
- Focused on quality, credibility, and trust as peer-to-peer community requirements
- Our authors, reviews, and users are NOT all members: we serve the entire global research community
- Providing leadership on issues of policy, ethics, and other best practices:
 - Reviewer and Author education
 - Plagiarism screening
 - Citation/bibliometrics usage
- Supporting new business models, functionalities, and author/user needs



IEEE quality makes an difference - I

IEEE publishes:

22 of the top 25 journals in Electrical and Electronic Engineering

14 of the top 15 journals in Telecommunications

4 of the top 5 journals in Artificial Intelligence

3 of the top 5 journals in Computer Science, Hardware & Architecture

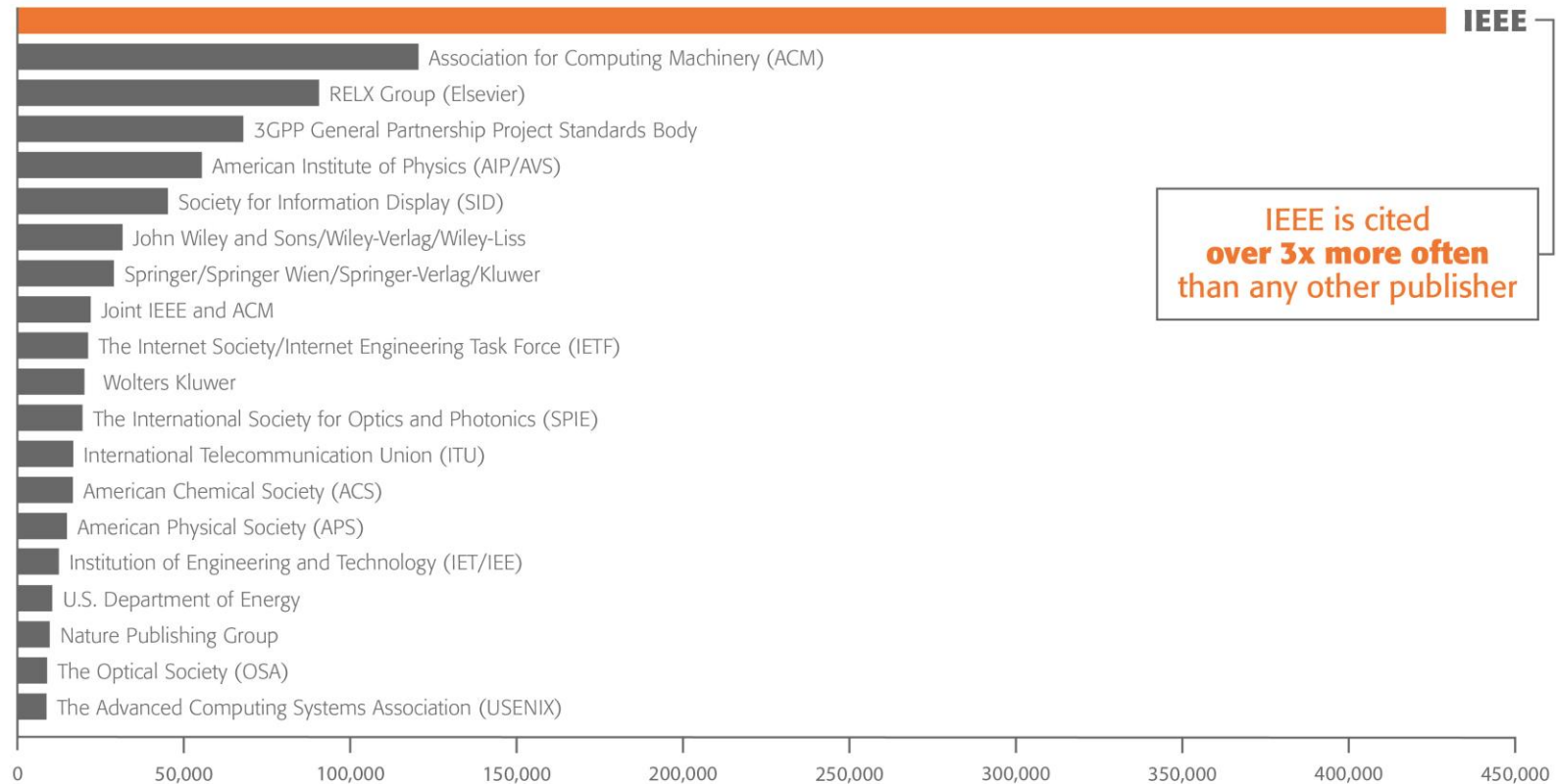
3 of the top 5 journals in Automation & Control Systems

2 of the top 5 journals in Computer Science, Cybernetics

2 of the top 5 journals in Imaging Science & Photographic Technology

IEEE quality makes an difference - II

Top 20 Publishers Referenced Most Frequently by Top 40 Patenting Organizations

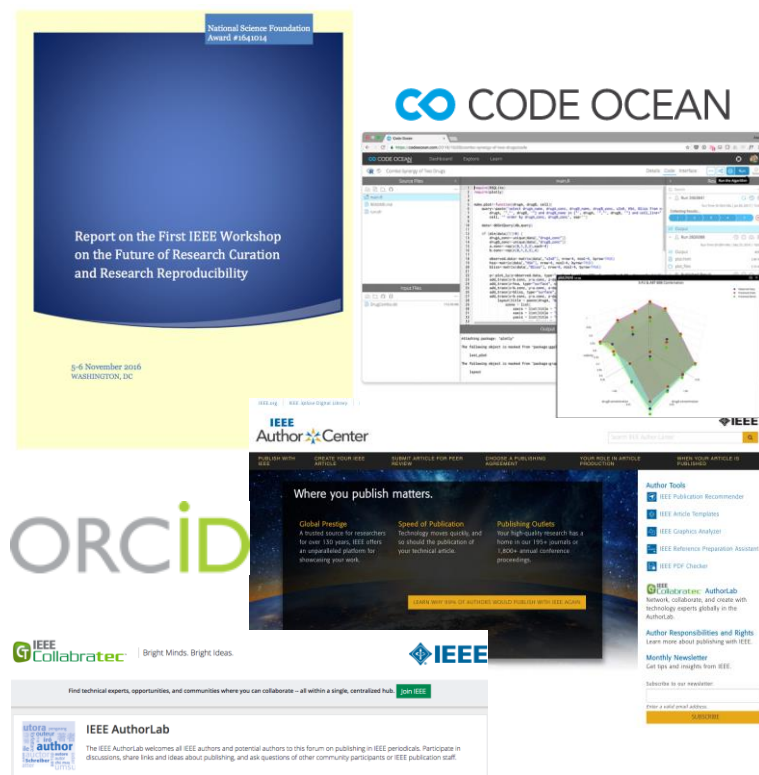


Source: 1790 Analytics LLC 2017. Based on number of references to papers/standards/conferences from 1997-2016.

IEEE Activities Supporting our Community

- NSF-sponsored Reproducible Research workshop with major publishers*
- Author Education program (live and online)
- IEEE Author Center
- Collabratec™ Author Lab and Author Tools
- Code Ocean workflow integration
- Mandatory ORCID for corresponding authors

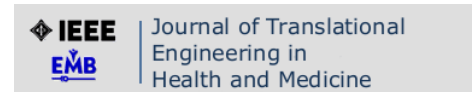
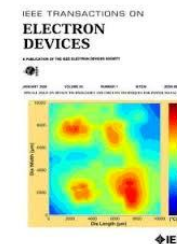
*http://www.ieee.org/publications_standards/publications/ieee_workshops/research_reproducibility.html



IEEE and Open Access / Public Access

Multiple Publishing Solutions for Authors and Funders

- Hybrid: gold OA in established publications
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- Multi-disciplinary: *IEEE Access* for gold open access
- Funder embargo compliance processes and key role in CHORUS
- Flexible Author posting policy
- Article Sharing Principles endorser



CHORUS Advancing Public Access to Research



Enabling Reproducible Research

Open Data, Open Code & Algorithms

- Link data sets and other artifacts embedded with article format. E.g:
 - Zenodo
 - Figshare
 - IEEE DataPort
- Discover and run code and/or algorithms in real time; easily share and collaborate with colleagues
- **NB:** challenge of adding these artifacts to the peer review process

