Comments from the American National Standards Institute on National Institute of Standards and Technology Request for Information on Existing Awards and Recognition Programs and Best Practices for Standards Workforce Development

NIST-2024-0003

The American National Standards Institute[1] (ANSI) welcomes the opportunity to provide its input to this NIST Request for Information in support of the implementation of the U.S. Government National Standards Strategy for Critical and Emerging Technology.

Existing Awards and Recognition Programs for Standards Development

1. **How can the U.S. Government and the U.S. standards community leverage existing awards and recognition programs or establish new programs to support standards participation and leadership in CET areas?**

There is a wide range of existing awards and recognition programs in the standardization community. The ANSI Leadership and Service Awards[2] are awarded annually to recipients recognized for their significant contributions to national and international standardization activities, as well as an ongoing commitment to their industry, the nation, and the enhancement of the global voluntary consensus standardization system. Additionally, numerous standards developing organizations manage awards and recognition programs in their own spheres of activity. The awards program managed by the InterNational Committee for Information Technology Standards (INCITS), which administers the U.S. Technical Advisory Group to ISO/IEC JTC1, recognizes the achievements of technical experts and encourages nominations from those who "hammer out the agreements and write the standards."[3] ASTM International's awards are primarily grouped into three categories: Society Awards, Society Recognized Committee Awards, and Technical Committee Awards.[4] An example, the Katharine E. Morgan Women in Leadership Award, recognizes female leaders of ASTM committees who have made significant contributions to the development of standards.

In the government space, individual agency awards can be leveraged to recognize government staff standards participation and leadership. For example, NIST's Edward Bennett Rosa award recognizes outstanding achievements or contributions in the development of documentary standards either within NIST or in cooperation with other government agencies or private groups. NIOSH's Prevention through Design (PtD) award recognizes individuals, teams, businesses, and other organizations that have

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[1] www.ansi.org
[2] https://www.ansi.org/events/standards-events/awards
[3] See https://www.incits.org/news-events/annual-awards
[4] https://www.astm.org/get-involved/membership/honors-and-awards.html

eliminated or reduced hazards through design or re-design efforts or have contributed to the body of knowledge that enables PtD solutions. [5]

Government-wide recognition programs, such as the Samuel J. Heyman Service to America Medals [6] and the Arthur S. Flemming Awards, [7] which are widely recognized awards programs for career federal employees, have also been leveraged to recognize standards-related accomplishments that benefit the nation.

Existing programs such as those above, both in the private sector and government, can be expanded to include awards specifically for standards participation and leadership in CET areas.

2. **What types of awards and recognition programs for standards development further standards engagement, especially with respect to CET?**

Programs that recognize and support young and emerging professionals engaged in standardization can be effective in reaching individuals engaged in CET sectors. Awards programs managed by ANSI, SES, and individual standards development organizations recognize individuals with fewer than 5-8 years of engagement in standards activities. Additionally, ANSI's Edward Lohse Information Technology Medal honors individuals who have participated in the development of information technology standards both at the national and international levels, demonstrated leadership in the promotion of such standards within the information technology standards community, and fostered cooperation among the bodies involved in global standardization. Targeting these cohorts in electrotechnology standardization is a key priority for the U.S. National Committee to the IEC. [8]

Best Practices for Standards Workforce Development

ANSI offers an array of courses, activities, tools, and resources for emerging professionals and students of all ages to learn more about the impact of standards and conformity assessment, the American National Standards (ANS) process, ANSI's role in international standards organizations, and opportunities for engagement in domestic and international standardization activities.

ANSI's education programs and resources raise awareness of the importance of standards and conformity assessment to students, academia, and the public, and provide engagement opportunities for the next generation of standardization participants. These initiatives bring together the expertise of partners from across the standards and conformity assessment community, and support implementation of the education-related aspects of the _United States Standards Strategy (USSS)_, which guides how the United States develops standards and participates in the international standards-setting process.

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[5] NIOSH presents the award in partnership with the American Industrial Hygiene Association (AIHA), the American Society of Safety Professionals (ASSP), and the National Safety Council (NSC).

[6] https://servicetoamericamedals.org/
[7] https://tspppa.gwu.edu/arthur-s-flemming-awards
[8] https://www.ansi.org/usnc-iec/programs-activities/young-and-emerging-professionals

The [ANSI Committee on Education](#) oversees all Institute initiatives related to standards and conformity assessment education and outreach. The committee works with the entire standards and conformity assessment community to introduce the importance of standards to the academic community and to the public at large, and continually seeks out partnerships and opportunities to engage and inform new constituents of all ages.

Standards developing organizations (SDOs) provide a range of training and education programs, including:

- New member orientation and training programs
- Programs for emerging professionals
- Leadership training and mentorship
- Access to standards for students
- University outreach and partnerships
  - Professor and student toolkits
  - Project grants
  - Scholarships
  - Student chapters programs
  - Professor of the Year awards
- Corporate training

Detailed information can be obtained from individual SDOs.

1. What types of support could improve professional development for early-career professionals, mid-career professionals, or those who are new to standards development?

Industry and standards developers should consider developing or significantly enhancing early- and mid-career training programs to introduce the concepts of strategic standardization and the value of standards and standards professionals to companies. Both group training and self-led individual training modules are relevant.

Companies can increase their workforce's standards literacy by ensuring that standards and other external technical engagements are a visible, company-wide effort. Various educational opportunities exist to provide standards knowledge to the workforce. In addition to these resources, employers can provide internal training for employees to help develop standards awareness within their organizations. Companies can incorporate self-paced online training offered by ANSI and individual SDOs into their employee training and development plans and programs.

Standards engagement is only valuable to employees if it is worthwhile and profitable to engage throughout their careers. Increased participation occurs at varying career stages, from early-career interns to experienced executives. The organization is responsible for ensuring that employees who participate in standards are given the resources necessary to maintain engagement while growing their careers. Engagement plans should include details on which institutes or organizations to engage, how to communicate with these groups, and specific strategies for encouraging standards development engagement.

Ongoing corporate support for staff participation in standards activities is critical to the sustainability of standards development activities. Companies expend significant resources to support staff in these

roles. To this end, raising awareness of the importance of standards at the corporate level is critical. One possible consideration would be to highlight a standards career path in executive leadership programs for industry executives, such as the Wharton School of Business at the University of Pennsylvania, and through executive education and mid-career programs at the Harvard Kennedy School and Princeton's School of Public and International Affairs. Consideration should also be given to an award or awards for companies that significantly support standardization.

2. **What type of educational outreach to business and technology decision-makers on why, how, and when to engage in standards development could increase their engagement?**

ANSI's recently revamped and updated [Standards Boosts Business](#) web resource provides a wealth of information that communicates the importance of participating in standards to executives and decision-makers in private- and public-sector organizations across all industries. The materials aid in demonstrating the business value of standards—and the benefits of participating in their development. Resources include:

- Case studies that show the impact of standards on various sectors
- Customizable elevator pitches designed to illustrate the strategic importance of standards participation to decision makers
- Content on the value of standards participation to companies, trade associations, government agencies, consumers, and emerging professionals
- A library of additional resources, including white papers and case studies from the standardization community

In addition to presenting at individual companies and trade associations, standards community stakeholders should pursue opportunities to present at national conferences. Too often, standard professionals attend conferences but are not visible. Serving on a panel or giving a presentation provides the visibility that is needed to increase the awareness of the role played by standards professionals. Presenting information on their committee and the standards under their jurisdiction highlights their importance and underscores the value of companies having a voice in the standards development process.

3. **How can the U.S. Government and the U.S. standards community more effectively work together to share best practices for standards workforce development?**

The U.S. government and standards community can work together with academic institutions on messaging regarding the importance of student engagement in standards. Without clear academic support, students are not likely to engage in standards development. Therefore, academic engagement must include forming strong relationships with both students and institutions. Establishing outreach to colleges, universities, and technical and trade schools should be a joint effort between the government, industry, and standards developers. Working together, these stakeholders can develop messaging to highlight the standardization process and the benefits of engaging in standards setting for CET.

Government-funded educational grant awards to universities align closely with the research focus of many faculty members, particularly those engaged in cutting-edge scientific and technological advancements where standards play a role. Such grants can provide essential funding that supports innovative educational research projects, enabling faculty to explore new ideas and develop solutions

and strategies to inspire and engage students in standards development. By aligning with the research interests of faculty, educational research grants foster an environment of research legitimacy on par with traditional basic research grants. Grants related to standards are not common, and those in play tend to restrict use of funds for typical university activities (e.g., conference fees, publication page charges, etc.) Universities sometimes struggle to find matching funds to cover non-allowable award items.

Expanding the scope and availability of grants focused on educational pedagogy can significantly enhance faculty's ability to influence student interest at a more fundamental level—within the classroom. Such grants would allow faculty to develop and implement innovative teaching methods, create engaging curricula, and conduct research on effective educational practices. This, in turn, can inspire students to develop a deeper interest in their subjects and understand the importance of standards development from an early stage in their academic journey.

Early exposure to standards informs students about relevant career opportunities. Project-based learning exercises that demonstrate the value of standards to specific application areas can aid in raising awareness and recruiting students who are interested in technical fields. Work-based learning (e.g., internships, coops, and apprenticeships) is also gaining interest among academic institutions and employers, since it is an effective strategy to bring relevance to education and impart skills that are needed in the workforce. A current example is the Washington Internships for Students of Engineering (WISE) program, which prepares future leaders of the engineering profession who are aware of, and who can contribute to, the increasingly important issues at the intersection of science, technology, and public policy in the United States.[9]

Publishing students' work that comes from engagement with standards can also serve as an incentive for students. If their work in standards forums is published and highlighted by the organizations they are partnering with, academic institutions may begin to see the benefit of these relationships. In addition, some SDOs support student-led publications, such as technical magazines, that showcase student research and standards engagement.

Funding for academic engagement in standards forums is also a priority. One factor for low academic participation in standards is funding, so it is important to plan to leverage grants and existing funding from industry to increase academic engagement. Some SDOs also offer students special memberships at a lower cost, an important consideration when identifying engagement opportunities.

Many industries are using earned and paid media to influence target audiences. Professional society initiatives, such as the Certified Financial Planner Board of Standards (CFP Board), can offer examples for educating the general public. The standards community could pilot some specific strategies targeted at academia and evaluate the effectiveness of these strategies.

About ANSI and Its Affiliates

The American National Standards Institute (ANSI) is a private non-profit organization whose mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their

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[9] https://wise-intern.org/

integrity. Its membership is comprised of businesses, professional societies and trade associations, standards developers, government agencies, and consumer and labor organizations.

The Institute represents and serves the diverse interests of more than 270,000 companies and organizations and 30 million professionals worldwide. ANSI is the official U.S. representative to the International Organization for Standardization (ISO) and, via the U.S. National Committee, the International Electrotechnical Commission (IEC). For more information, visit www.ansi.org.

Via its affiliate, Workcred, ANSI supports efforts to strengthen workforce quality by improving the credentialing system, ensuring its ongoing relevance, and preparing employers, workers, educators, and governments to use it effectively.

The ANSI National Accreditation Board (ANAB), a wholly owned subsidiary of ANSI, promotes confidence in the marketplace through its accreditation programs for a wide array of conformity assessment bodies.

Conclusion

ANSI commends NIST for reaching out broadly to solicit input on the implementation of the U.S. Government National Standards Strategy for Critical and Emerging Technology and for the recognition of the importance of the public-private partnership that has made the U.S. private sector-led standardization system so successful.