

Engineering Technology Education in the United States

An Informational Briefing on a New Report from the National Academy of Engineering
In Conjunction with the House Manufacturing Caucus

March 9, 2017, 1:30 – 3:00 p.m.

Capitol Visitors Center
Congressional Meeting Room North
CVC-268

The vitality of the innovation economy in the United States depends on the availability of a highly educated technical workforce. A key component of this workforce consists of engineers, engineering technicians, and engineering technologists. The purpose of this briefing is to shed light on the relatively underappreciated roles and contributions of engineering technicians and technologists. Unlike the much better-known field of engineering, engineering technology (ET) is unfamiliar to most Americans and goes unmentioned in most policy discussions about the US technical workforce. The presentations are based on a recent report by the National Academy of Engineering (NAE) Committee on Engineering Technology Education in the United States. In conducting its work, the committee commissioned a review of federal education and occupational data, fielded two surveys—one of ET educators and the other of employers of ET talent—held an information-gathering workshop, and conducted a literature review. **View report here:** <https://www.nap.edu/catalog/23402>

Introduction and Welcome Remarks

Katharine Frase, NAE Committee Co-Chair and IBM Corp. (ret.)
Rep. Tom Reed (R-NY), Co-Chair, House Manufacturing Caucus
Rep. Tim Ryan (D-OH), Co-Chair, House Manufacturing Caucus
Rep. Paul Tonko (D-NY)

Education and Employment Data

Daniel Kuehn, Urban Institute

Key Findings and Recommendations

Ron Latanision, NAE Committee Co-Chair and Exponent, Inc.

Industry Panel

Werner Eikenbusch, NAE Committee and BMW
Katharine Frase, NAE Committee Co-Chair and IBM Corp. (ret.)

Education Panel

Jeffrey Ray, NAE Committee and Western Carolina State University
Melvin Roberts, NAE Committee and Camden County College

Former Student Panel

Brandi Rearden, Georgia Power
Chris Cutter, Molex

Q&A

Space is limited; please [RSVP](#)

Chris Cutter works at Molex, a manufacturer of electronic components based in Florida. Prior to that, he was employed at Novelis, an industrial aluminum company headquartered in Atlanta, Georgia. Mr. Cutter earned his BS degree in mechanical engineering technology from Southern Polytechnic State University in 2012. While in school, he concentrated in engineering graphic design and worked at an automotive parts company as a CAD drafter. In 2012, he was named the Engineering Technology Student of the Year for the state of Georgia.

Werner Eikenbusch is head of talent management in the Americas for BMW Group Corporate Human Resources. Drawing on his experiences in apprenticeship and engineering programs in Germany and the United States, Mr. Eikenbusch helped create new talent development programs for BMW in the Americas, including the BMW Scholars program, a dual study/work education program modelled after the German system. Mr. Eikenbusch began his career as a manufacturing engineer for BMW in Munich. He holds an MS degree in management engineering from New Jersey Institute of Technology, where he was a Fulbright Scholar; and a Dipl. Ing. (FH) Maschinenbau, earned in Germany.

Katharine G. Frase (NAE) is retired vice president, Education Business Development for IBM. In this capacity she set strategy for IBM's education solutions, including partnerships and customer engagement. Prior to this role, as chief technology officer, IBM Public Sector, she provided thought leadership for IBM and its customers on innovation and strategic transformation specific to government, education, life sciences, health care, and cities, driving the creation of new solutions. Dr. Frase received her AB in chemistry from Bryn Mawr College and PhD in materials science and engineering from the University of Pennsylvania.

Daniel Kuehn is a research associate in the Urban Institute's Income and Benefits Policy Center. Dr. Kuehn has ten years of experience conducting and managing research on employment, education and training, apprenticeship in the science and engineering workforce, racial disparities, and the transition from school to work. He primarily conducts quantitative empirical work, with an emphasis on non-experimental evaluation methods. Dr. Kuehn also has experience doing qualitative research and much of his quantitative research experience has been on mixed-methods projects.

Ronald M. Latanision (NAE) is a senior fellow at Exponent, Inc., an engineering and scientific consulting company, and an emeritus professor at MIT. Before joining Exponent, he was director of the H.H. Uhlig Corrosion Laboratory in the Department of Materials Science and Engineering at MIT. He has served as a science advisor to the US House of Representatives Committee on Science and Technology, and in 2002 he was appointed by President George W. Bush to membership on the US Nuclear Waste Technical Review Board, reappointed for a second four-year term by President Barack Obama. Dr. Latanision received a BS in metallurgy from Pennsylvania State University and a PhD in metallurgical engineering from Ohio State University.

Jeffrey Ray is dean of the College of Engineering and Technology at Western Carolina University (WCU). As an educator, Mr. Ray likes to draw on his precollege experience as a journeyman industrial electrician and machinery troubleshooter. He has held leadership positions with the American Society for Engineering Education (ASEE), including vice president of the executive board and chair of the engineering technology council. He received his bachelor's and master's degrees from Tennessee Technological University and his doctorate from Vanderbilt University, all in mechanical engineering.

Brandi Rearden works at the Georgia Power Company in Macon. She graduated with honors in December 2013 from Southern Polytechnic State University with a BS in electrical engineering technology. She received the Electrical and Computer Engineering Technology department's Undergrad Student of the Year award in 2013 as well as the Institute of Electrical and Electronics Engineers Power and Energy Society – Atlanta Section Academic Award. Ms. Rearden participated in the Mechanical Contractors' Association of America Student Competition in the 2013-2014 academic year, where her team won the national championship.

Melvin L. Roberts is a full professor of engineering and the interim dean of the Division of Business, Computer and Technical Studies at Camden County College in Blackwood, New Jersey. He has also held the post of dean of Occupational Skills & Customized Training at the college. From 2007 through 2014, Dr. Roberts was program chair of the ASEE Two-Year College (TYC) Division and he has been the chair of the TYC Division since 2009. Dr. Roberts holds a BS in mechanical engineering cum laude from Howard University, an M.S. in mechanical engineering from the Georgia Institute of Technology, and a doctorate in education from Wilmington University, Delaware.