As Sullivan stated, “Design with the end in mind, build and foster multidisciplinary teams with a shared vision for what is possible, and have the courage and tenacity to make the possible probable.” The secret sauce? Employ the engineering design process to stay ahead; be evidence-driven in all we do and commit to failing often to succeed sooner. Better yet, celebrate our educational failures to leverage the learning that comes from disappointing outcomes, paving the path to increasing our impact. In short, as faculty, model being part of a learning community ourselves—fraught with going down the wrong path, implementing programs whose results aren’t so impressive and landing on some stars.

This talk describes overcoming barriers to change. Dr. Sullivan revels in problem solving and when stuck, applies the engineering design process to mine opportunities for staying ahead. Our engineering students, their needs and the needs of the engineering profession are changing rapidly. Staying ahead in this rapidly-changing landscape compels engineering colleges to move beyond the physics thinking of getting it right to getting comfortable with ambiguity. Staying ahead means we must now find pathways, to broaden participation so that our graduates reflect the richness of our nation’s youth. Staying ahead means having the courage to overcome system constraints to create engineers equipped to thrive in careers we cannot even imagine today.

Sullivan who earned her Ph.D. in environmental health physics and toxicology from Purdue University is founding co-director of the integrated teaching and learning program and the general engineering plus degree program at the University of Colorado Boulder’s College of Engineering and Applied Science. She founded and leads the university’s extensive K-12 engineering initiative and ASEE K-12 division and was awarded ASEE’s 2005 Lifetime Achievement Award followed by NAE’s 2008 Gordon Prize for Innovation in Engineering and Technology Education. She has served on several National Science Foundation and National Academy of Engineering advisory boards. Sullivan is a founding board member for the Denver Schools of Science and Technology, a network of high-achieving secondary schools serving urban youth.

Save the date for IEEI Distinguished Lectures this semester:
Norman Fortenberry, Ph.D.
Tuesday, March 24,
12 - 1 p.m.