

Helping Students Develop their Cross Cultural Communication Skills to Promote a More Diverse and Inclusive Learning Environment

Dr. P.K. Imbrie, University of Cincinnati

P.K. Imbrie is the Head and Professor of the Department of Engineering Education and a Professor in the Department of Aerospace Engineering and Engineering Mechanics University of Cincinnati. He received his B.S., M.S. and Ph.D. degrees in Aerospace Engineering from Texas A&M University. He is an advocate for research-based approaches to engineering education, curricular reform, and student retention. Imbrie conducts both traditional, as well as educational research in experimental mechanics, piezospectroscopic techniques, epistemologies, assessment, and modeling of student learning, student success, student team effectiveness, and global competencies. He helped establish the scholarly foundation for engineering education as an academic discipline through lead authorship of the landmark 2006 JEE special reports "The National Engineering Education Research Colloquies" and "The Research Agenda for the New Discipline of Engineering Education." He has a passion for designing state-of-the-art learning spaces. While at Purdue University, Imbrie co-led the creation of the First-Year Engineering Program's Ideas to Innovation (i2i) Learning Laboratory, a design-oriented facility that engages students in team-based, socially relevant projects. While at Texas A&M University Imbrie co-led the design of a 525,000 square foot state-of-the-art engineering education focused facility; the largest educational building in the state. His expertise in educational pedagogy, student learning, and teaching has impacted thousands of students at the universities for which he has been associated. Imbrie is nationally recognized for his work in active/collaborative learning pedagogies, teaming and student success modeling. His engineering education leadership has produced fundamental changes in the way students are educated around the world.

Imbrie has been a member of ASEE since 2000 and has been actively involved with the Society in various capacities. He has served in multiple leadership roles in the ERM and FPD divisions, including: ERM board of directors (2002-2004), program chair for ERM (2005 and 2009), ERM program chair for Frontiers in Education (FIE) (2004), FIE Steering Committee ERM representative (2003-2009), as well as program chair (2016) and division chair (2016-17) for FPD. He has also served on two ASEE advisory committees.

Dr. Beville A. Watford, Virginia Polytechnic Institute and State University

Watford is Professor of Engineering Education, Associate Dean for Equity and Engagement and Executive Director of the Center for the Enhancement of Engineering Diversity.

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Dr. Stephanie G. Adams, University of Texas at Dallas

Dr. Stephanie G. Adams is the Department Head and Professor of Engineering Education at Virginia Tech. She previously served as Associate Dean for Undergraduate Studies in the School of Engineering at Virginia Commonwealth University and was a faculty member and administrator at the University of Nebraska-Lincoln (UNL). Her research interests include: Teamwork, International Collaborations, Faculty Development, Quality Control/Management and Broadening Participation. She is an honor graduate of North Carolina A&T State University, where she earned her BS in Mechanical Engineering, in 1988. In 1991 she was awarded the Master of Engineering degree in Systems Engineering from the University of Virginia. She received her Ph.D. in Interdisciplinary Engineering from Texas A&M University in 1998. She is the recipient of numerous awards and honors, including the National Science Foundation's most prestigious, Faculty Early Career Development (CAREER) award. She is a Fellow of the American Society of Engineering Education, holds membership in a number of organizations and presently serves on the National Advisory Board of the National Society of Black Engineers.

Dr. Carmen Sidbury, National Action Council for Minorities in Engineering, Inc.

Workshop: Helping Students Develop their Cross Cultural Communication Skills to Promote a More Diverse and Inclusive Learning Environment.

Scaffolding young engineers to envision pathways that will enable them to develop a long-term commitment to increase diversity in engineering is an organic way to promote an inclusive and equitable environment with a strong sense of belonging for all students, faculty and staff. Given the increasingly diverse and multicultural world, the question is “how do we prepare our first-year engineering students with the knowledge, skills and abilities (KSA) necessary to ensure they are provided an opportunity to reach their potential in this regard?” The proposed workshop will engage participants in a series of novel activities, which are grounded in the literature that are developmentally appropriate to help first-year students discover their communication style and learn how said style impacts their interactions with others.

The purpose of the workshop is to share information on how a faculty and/or staff member (or team of faculty and staff members) can implement ways to engage first-year students in the broader discussion of diversity, equity, and inclusion. As various initiatives such as the ABET EAC Criterion 3, Outcome 5, “an ability to function effectively on a team whose members together provide leadership, *create a collaborative and inclusive environment*, establish goals, plan tasks, and meet objectives” (emphasis added), along with deeper outcomes created institutionally and specifically for first-year students, such as 1) Develop skills for cross-cultural communication; 2) Design a process to communicate technical information via written, oral and visual methods and demonstrate skills for cross-cultural communication, the curricular vehicle takes on importance. This workshop will present known curricular initiatives for incorporating experiential assignments within the first-year curriculum along with rubrics to grade assignments. These range from a cultural context inventory and communication star to a handedness exercise and identity mapping. Further, the participant will work to transfer these ideas and ideas from other participants to their particular institutional need.

The one-hour timeline for the workshop will be:

- 10 minutes - Review of DEI curricular literature and background.
- 10 minutes - Small group exercise and report out discussing institution specific learning outcomes and environments.
- 7 minutes - Discussion of various learning objectives, tools, and activities.
- 12 minutes - Small group exercise and report out of variations and additional tools and activities gathered.
- 7 minutes - Discussion of assessment and evaluation examples and alternatives.
- 12 minutes - Small group exercise and report out of assessment and evaluation examples and alternatives.
- 2 minutes - Summary, wrap-up, and evaluation.