
GC 2012-5622: THE ATTRIBUTES OF A GLOBAL ENGINEER: INTERNATIONAL FACULTY DEVELOPMENT CONSIDERATIONS

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Dr. Stephen Hundley is Associate Dean for Academic Affairs and Undergraduate Programs in the Purdue School of Engineering and Technology at Indiana University-Purdue University Indianapolis (IUPUI).

Ms. Lynn G Brown, The Boeing Company

Lynn G. Brown is the Corporate International Program Manager for Higher Education and STEM for The Boeing Company and the Chairperson of the ASEE Corporate Members Council Special Interest Group for International Engineering Education. Lynn was selected as Boeing's Higher Education Program Manager in 2004 at which time she became the leader of various programs and projects for predominately domestic higher education engagements. Due Boeing's desire for international expansion, Lynn was given the responsibility of growing Boeing Higher Education International presence. This includes: Developing corporate policy, procedures and guidelines for international university relationships Establishing corporate infrastructure and leading a global network of Boeing executives for implementing Higher Education engagements for the company, and Working across Boeing organizations to align higher education engagements and funding to the various Boeing Presidents' country Strategies. Annually, Boeing provides over \$7.1 million dollars of charitable and business contributes for international and domestic higher education engagements through Higher Education and STEM.

Prior to this assignment, Lynn managed the Educational Partnerships group in Boeing's training organization. She was responsible for conducting integrated and sustained partnerships and internships with schools, colleges, and universities to communicate skills required by the manufacturing industry. During this time, she served as Chairperson for the following: National Employer Council for Workforce Preparation (3 yrs); Manufacturing Technology Advisory Group Board of Directors (7 yrs); 3 National Science Foundation Review Committees for manufacturing and engineering related NSF grants. Lynn also served as a conference committee member of the National Career Pathways Network and serving on a number of state and local boards and skills standards committees.

She has been a Director of Special Programs in a school district and has taught at the secondary, community college and university levels as well as been a research associate at IC2 Institute in Austin, Texas.

Lynn attend the University of Texas at Austin for her PhD work in Higher Educational Administration; Northern Arizona University for her MA in Curriculum and Assessment and Arizona State University for her BA in Secondary Education Communications.

Prof. Patricia Fox, Indiana University Purdue University, Indianapolis

Pat is currently the Associate Chair of the Computer Information and Leadership Technology Department at Purdue School of Engineering and Technology at IUPUI and Assistant Clinical Professor of Organizational Leadership and Supervision. Pat has been a faculty member in the School for 29 years and has served as an administrator for a number of those years. She has been very active in ASEE, serving three times on the Board of Directors. Pat is actively involved in the Engineering Technology Division, Engineering Technology Leadership Institute, and Corporate Member Council of ASEE. Pat is also an ASEE Fellow.

Mr. Alan Jacobs, Education Market Business Development Consultant

Mr. Hans Hoyer, American Society for Engineering Education

Ms. Catherine Didion, National Academy of Engineering

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The Attributes of a Global Engineer: International Faculty Development Considerations

Abstract

What knowledge, skills, abilities, and characteristics are needed by engineering professionals living and working in an increasingly global context? At what stage of an engineer's professional development are these attributes acquired and applied? In what ways do academicians, employers, policymakers, and others play a role in equipping engineering students and practitioners with such attributes? And to what extent are there similarities and differences in the nature of expected attributes based on one's background or location?

For the past three years, the American Society for Engineering Education (ASEE) Corporate Member Council's Special Interest Group for International Engineering Education developed, presented, and vetted with its stakeholders a series of attributes representing the desired competencies and characteristics needed by engineers in order to effectively live and work in a global context. An online survey was launched to validate the performance and proficiency levels of each attribute, including the stages at which attributes were essential to the preparation, performance, and employability of global engineers. Educators, employers, students, and professional engineers throughout the global engineering community were invited to participate in the survey. To promote input and obtain feedback from the largest possible global engineering audience, ASEE collaborated with the International Federation of Engineering Education Societies (IFEES) to make the survey available in Chinese, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish and Turkish. More information about the Attributes of a Global Engineer Project is available here: <http://www.ifees.net/activities/ASEECMCSIG-IFEES.cfm>

We are now at the phase of the project where we will begin conducting faculty development workshops and focus groups with stakeholders from around the world in order to validate, clarify, and expand on the results of this research. This workshop will describe the stakeholder-driven process to identify and define attributes of a global engineer, including survey development and sampling procedures; present a summary of key findings-to-date; highlight the recommendations and implications of how findings should be used to enhance engineering education; and engage participants in brief focus group discussion to permit additional input and perspectives on the Attributes of a Global Engineer Project. In addition to the proposed workshop at ASEE's International Forum, we will conduct a similar workshop at the International Conference on Engineering Education in Finland in August and have proposed a similar workshop for the World Engineering Education Forum in Argentina in October. Such widespread international faculty development and input surrounding this project will strengthen its overall outcomes and impact on engineering education and workforce preparation.