



2016 ASEE INTERNATIONAL FORUM

PRESENTED BY THE BOEING COMPANY

**Convention Center, Hall F, Rooms 260-264
New Orleans, Louisiana
Saturday, June 25, 2016**

Presented by





JOIN US NEXT YEAR IN COLUMBUS!

June 2017
Great Columbus Convention Center
Columbus, OH



WELCOME AND GREETINGS FROM ASEE

We welcome and thank the participants, speakers and partners to the 2016 ASEE International Forum. We look forward to your active engagement in this year's Forum.

The purpose of the International Forum is to bring together engineering professionals from academia and industry from around the globe who are engaged in innovative engineering education initiatives to share information on experiences and best practices with particular interest in highlighting engineering education activities involving at least two nations.

The 2016 ASEE International Forum will be held June 25 in New Orleans, Louisiana. The event will feature plenary speakers from UNESCO, ABET, SPEED, IFEEES, and GEDC. A unique feature of this year's forum will be a virtual session for those unable to attend the forum in person. In all, the one-day Forum will consist of plenary presentations, three paper sessions arranged into concurrent tracks, and virtual presentations.

By organizing this event, ASEE reaffirms its commitment to furthering education in engineering by encouraging local, national, and international communication and collaboration and recognizing outstanding contributions of individuals and organizations. It is our hope that the Forum will provide opportunities for all participants to engage in stimulating discussions and will serve as a bridge to foster future collaborations.

ASEE is pleased to have the continued engagement of The Boeing Company, the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems, in the International Forum. We want to express special thanks and appreciation to the Boeing Company for their generous support to this year's International Forum.

We look forward to hosting you in New Orleans!



Catherine Skokan, PhD
Vice President of
External Affairs



Ashok Agrawal, D.M., P.E.
Managing Director,
Professional Services



PARTICIPATING ORGANIZATIONS

ASEE gratefully acknowledges the following societies for participating in the 2016 International Forum.



THANK YOU TO OUR PRESENTING SPONSOR WHO HELPED MAKE TODAY'S EVENT POSSIBLE



Howard Appelman is the Boeing Company Focal for the American Society for Engineering Education (ASEE) and is a member of the ASEE Corporate Member Council.

Howard Appelman joined The Boeing Company in 1982 as an Electronics Engineer. He is currently an Associate Technical Fellow in Boeing Research & Technology (BR&T) assigned to the Manufacturing Technology Integration (MTI) organization in St. Louis, MO. Mr. Appelman is an expert in the application of advanced manufacturing technology to the assembly, integration, and testing of aerospace products, and in the development of Lean+ and Breakthrough Processes. He also participates on Boeing's External Technical Affiliations Integration Board and is a focus area leader in Boeing's Global Technology Strategic University Program.

Howard Appelman is an Adjunct Prof. of Mechanical Engineering at the Missouri University of Science and Technology (MS&T) where he teaches graduate level courses in "Design for Manufacturing" and "Concurrent Engineering".

INTERNATIONAL FORUM STEERING COMMITTEE

Howard Appelman (Chair)
The Boeing Company

Maria Alvares
Director, Halliburton
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Engineering
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Indira Nair
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Professor of Civil and
Environmental Engineering
University of Tennessee

Phil Sanger
Professor
School of Engineering
Technology
Purdue Polytechnic Institute

Catherine Skokan
Vice President, External
Relations
Colorado School of Mines



PARTNER ORGANIZATION PLENARY I - ABET



Michael K. J. Milligan is Executive Director and CEO of ABET, a nonprofit organization that accredits nearly 3,600 college and university programs in the disciplines of applied science, computing, engineering, and engineering technology located in 29 countries. In this role, Milligan leads a full-time staff headquartered in Baltimore supporting the operations of over 2,200 accreditation experts. Milligan is responsible for all aspects of ABET's global operations and reports directly to the Board of Directors.

Prior to joining ABET, Milligan worked for the Aerospace Corporation developing a new generation environmental satellite for the National Oceanic and Atmospheric Administration (NOAA). He also served 24 years as a career U.S. Air Force officer working in the areas of operations, international research & development, and technology acquisition. He served six years as an associate professor and Deputy Department Head in the Department of Electrical and Computer Engineering at the U.S. Air Force Academy, in Colorado.

Milligan earned a Ph.D. from The University of Texas at Austin, an M.S.E. from the University of Massachusetts at Lowell, and a B.S. from Michigan State University - all in electrical engineering. He also earned an M.B.A. from Western New England College, Springfield, MA and is a Certified Association Executive (CAE). Milligan is a senior member of the Institute of Electrical and Electronics Engineers (IEEE), a member of the Tau Beta Pi Engineering Honor Society, and a registered professional engineer in Colorado and Maryland. He lives in Severna Park, Maryland with his engineer wife and their two sons.

LUNCH SPEAKER, PRESENTED BY BOEING



Candice M. Smith, PMP, is currently director of Global Engineering & External Technical Affiliations in ET&T. She was previously chief of staff to the Chief Technology Officer and leader of the EO&T Business Integration organization. Prior roles include project engineer managing direct foreign investment / technology transfer offset projects focused on India; Systems engineer on Dallas Special Projects team, BR&T Support and Services, and Future Combat Systems; Integration Engineer on the Joint Helmet Mounted Cueing Systems; and began her career as a Boeing Co-op student. Candice's interests include promoting students' interest in math, science, and technology through engagement and mentoring. She's a graduate of the 2006 class of Greater Missouri Leadership Challenge and recipient of St. Louis American Foundation Salute to Young Leaders award and St. Louis Business Journal 30 Under 30 award for professional and personal excellence. She proudly serves on the board of the Metro Theater Company, Illinois Board of Juvenile Justice, and several other organizations.

PARTNER ORGANIZATION PLENARY II - UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANISATION (UNESCO)



Rovani Sigamoney is a chemical/environmental engineer from South Africa who started in the platinum refinery/mining sector and then moved on to researching bioenergy systems and biofuels for Africa.

She joined the United Nations Educational, Scientific and Cultural Organisation (UNESCO) HQ in Paris, France in 2007 in the Natural Sciences Sector and later ran the Chemistry programme and International Year of Chemistry 2011. She thereafter took over the UNESCO Engineering programme. The Engineering Programme is working with Member States (UNESCO has 195 Member States), international partners and program experts to strengthen engineering education through curricula development, hands-on training and capacity building. In line with UNESCO's global priorities on Africa and Gender Equality, it focuses on

women and Africa but also has activities around the world. Rovani is passionate about women in engineering and encouraging more youth to pursue careers in engineering.

She previously worked at the United Nations Environment Programme (UNEP), Paris on a biofuels strategy and also at the Wuppertal Institute of Climate Change in Germany on a policy document for the European Parliament on the security of energy supply.

PARTNER ORGANIZATION PLENARY III - IFEEES, GEDC, SPEED



Hans-Jürgen Hoyer, Ph.D. is the Secretary General of the International Federation for Engineering Education Societies (IFEEES), Executive Secretary of the Global Engineering Deans Council (GEDC), and Resident Scholar in Global Engineering at Marquette University. Former Director of International Programs and Strategy for the American Society for Engineering Education (ASEE) and co-founder of the Indo-US Collaborative for Engineering Education (IUCEE). He serves on various advisory committees globally.

Prior to 2006, Hans J. Hoyer was CEO of World Links, a spin-off of the World Bank. In this capacity, he worked globally on issues related to secondary education, teachers' education, and on-line collaborative learning focusing on science and social studies among high school students across the globe. Dr. Hoyer has

been a Visiting Scholar at the Center for International Studies at MIT, a Fellow at Harvard's School of Education and Visitor at the Kennedy School of Government. He was dean of the graduate program at the School for International Training, World Learning and Executive Director of the Executive Training Program for global governmental and NGO leaders in Brattleboro, Vermont. He also taught at George Mason University in Fairfax, VA. and Montgomery College, Takoma Park, MD. He earned his Ph.D. at American University in Washington, D.C. and was a post-doctoral fellow at the Organization of



American States, carrying out research in the Rio de la Plata region of South America. He is Honorary Professor in universities in Hungary, India, Peru and Kazakhstan. He started his career as a Peace Corps Volunteer and high school teacher in Linares and Talca, Chile and has lived in India, Sri Lanka, Chile, Peru, Brazil, Ecuador, Paraguay, Argentina, Mexico, Belgium, Germany and Sub-Saharan Africa (Kenya and Zimbabwe).

Over his extensive career he has visited 138 countries, is fluent in four languages and conversant in an additional five languages. Dr. Hoyer has led several international development programs, including CARE, Plan International, and Heifer International. In these latter roles, he held executive leadership positions such as Senior VicePresident/Chief Operating Officer, and Regional Executive. He also represented the largest U.S. farming membership association as a spokesperson at the European Union and European Parliament in Brussels and also represented them in Mexico and Central America.

He has served on the board of directors with Nelson Mandela of El Taller, a global civil society network headquartered in Tunisia as well as on several social-action community groups. He was also on the staff of the Inter American Foundation, created by the U.S. Congress to support socio-economic development throughout Latin America/Caribbean. He was on the advisory board of Hewlett Packard's e-Inclusion Global Advisory Board related to their work in South Africa and Founding member of the Board of the Engineering for the Americas (EftA) initiative under the umbrella of the OAS. He serves on the Editorial Committee of the Argentinean Journal of Engineering Education, Science and Technology and is a member of the Consultative Committee at Aalborg University and UNESCO.

He has written and published on a broad range of subjects related to international development, politics, health, education, and engineering education. Born in Berlin, Germany, he immigrated to the US as a teenager. His wife is Canadian and he has four children who were born in the U.S., Brazil, Mexico and Belgium.



Peter Kilpatrick serves as the current Chairperson of the Global Engineering Deans Council (GEDC), and on the Executive Committee of the International Federation of Engineering Education Societies (IFEES). He is the McCloskey Dean of Engineering at the University of Notre Dame in Notre Dame, Indiana, USA. Kilpatrick joined Notre Dame in January 2008 from North Carolina State University (NCSU), where he had served on the faculty for 25 years and as head of the Department of Chemical and Biomolecular Engineering since 1999. He also served as the Founding Director of the North Carolina Biomanufacturing Training and Education Center (BTEC), a unique learning and training facility designed to train the next generation of Biopharmaceutical professionals and Biotechnology industry professionals.

Kilpatrick conducts research in colloidal and interfacial science, with an emphasis on the colloidal and molecular properties of petroleum and on biological membranes. His specific interests are in the ways in which complex molecules aggregate in solution and the ways in which those aggregates self-assemble on and adsorb to interfaces. His work is leading to oil production and refining that is both more energy efficient and better for the environment. He is the author of more than 90 refereed journal publications and the holder of 13 patents.

In his time at the University of Notre Dame as Dean of Engineering, the College has grown its undergraduate enrollment by nearly 80%, has increased the size of its faculty by more than 40% and has more than doubled its external research funding to more than \$50 Million per year.



Michael E. Auer is Vice-Rector and Professor of Electrical Engineering at Carinthia University of Applied Sciences Villach and Professor for Microelectronics at University of Klagenfurt, Austria. His current research is directed to technology enhanced learning and remote working environments especially in engineering.

He is author or co-author of more than 190 publications and leading member of numerous national and international organizations in the field of Online Technologies.

Michael Auer is founder and chair of the annual international IEEE EDUCON, ICL and REV conferences and chair or member of the Program Committees of several international conferences and workshops. He works as an evaluator and coordinator of European Union funded research projects and is member in expert groups of the European Commission as well as US NSF.

Michael Auer is Founding-President and CEO of the "International Association of Online Engineering" (IAOE) since 2006, a non-governmental organization that promotes the vision of new engineering working environments worldwide. In 2009 he was appointed as member of the Advisory Board of the European Learning Industry Group (ELIG). Furthermore, he is one of the founders and Secretary General of the "Global Online Laboratory Consortium" (GOLC). GOLC is the result of an initiative started in 2009 at MIT to coordinate the work on educational Online Laboratories worldwide. From 2010–2016 he served as President of the "International Society of Engineering Education" (IGIP).

During the World Engineering Education Forum (WEEF2015) he was elected as President of the International Federation of Engineering Education Societies (IFEES) for 2016–2018.



Uriel Cukierman is President of IFEES, member of the GEDC Executive Committee and Director of the Center for Educational Research and Innovation at the Universidad Tecnológica Nacional (UTN) in Argentina. He has recently been appointed as Research Professor at the University of New Mexico, USA. He has served as the Dean of Engineering at the Universidad de Palermo, Argentina and, previously, as the Information & Communications Technologies Secretary at UTN for more than 15 years. Recently awarded as "Distinguished Educator" by the IOEM, "Honorary Professor" by the Universidad Ricardo Palma in Lima, Peru and International Engineering Educator *Honoris Causa* "Ing.Paed.IGIP h.c." Produced three books about Learning Technologies and Engineering Education, one of which was published by Pearson. Authored 5 book chapters and more than 50 papers in refereed journals and conferences.



Avneet Hira is a doctoral student in the School of Engineering Education at Purdue University. Avneet is the Vice President – Educational Content for SPEED. Her research includes K-12 education and first year engineering in light of the engineering design process, and inclusion of digital fabrication labs into classrooms. Her current work is on the use of classroom Makerspaces for an interest-based framework of engineering design. She is also interested in understanding the social and cultural underpinnings of engineering education, to study and develop indigenous engineering capabilities. After completing a B.E. in Aeronautical Engineering from PEC University of Technology, she received an M.S. in Aerospace Engineering from Purdue University.



Dhinesh Radhakrishnan is a doctoral student in the School of Engineering Education at Purdue University. His research includes utilization of technology in education, and socially constructed education in low-resource settings. His current work is on developing engineering skills curriculum for out-of-school youth in Africa utilizing digital learning materials. Dhinesh is the Global Student Forum Chair for 2016 in SPEED. He is also the Co-Director of Footsteps. He has been associated with SPEED for the past 6 years and served in various positions. Dhinesh holds a Bachelor in Electrical Engineering and Masters in Energy Systems (Specialization in Renewable Energy).



2016 ASEE INTERNATIONAL FORUM PROGRAM

ALL ACTIVITIES WILL BE HELD IN HALL F, NEW ORLEANS CONVENTION CENTER, ROOMS 260-264

7:00 a.m. – 5:00 p.m.	Registration ROOM 260 FOYER
7:30 a.m. – 8:00 a.m.	Continental Breakfast ROOM 260 FOYER
8:00 a.m. – 8:30 a.m.	Introduction and Welcome ROOM 260 Presenters: Ashok Agrawal <i>Managing Director, Professional Services</i> <i>Director, External Affairs</i> <i>American Society for Engineering Education (ASEE)</i> Howard Appelman <i>Chair, International Forum Steering Committee</i>
8:30 a.m. – 9:45 a.m.	Partner Organization Plenary I ROOM 260 Ethics in International Engineering Education Is ethics viewed the same around the world? What are societies' expectations of engineers and ethics? This plenary talk highlights the importance of integrating ethics into engineering education on a global scale. Recent examples of lapses in ethical judgment and corruption in engineering environments will be discussed. Presenter: Michael K. J. Milligan <i>Executive Director and CEO of ABET</i>
9:45 a.m. – 10:15 a.m.	Networking Break <i>Sponsored by The Boeing Company</i> ROOMS 260 FOYER
10:15 a.m. – 11:45 a.m.	Concurrent Paper Tracks 1 - Session I <ul style="list-style-type: none">• Accreditation Moderator: Indira Nair• Study Abroad Programs Moderator: Howard Appelman• Curriculum Moderator: Wayne Davis



10:15 a.m. – 11:45 p.m.

Concurrent Paper Tracks Session I - Accreditation
ROOM 262

ABET Accreditation of International Technology Programs—A Team Chair’s Perspective

Amitabha Bandyopadhyay, *State University of New York, Farmingdale*

Professional Accreditation of Engineering Programmes and EUR-ACE labels in Central Asia

Sergey Gerasimov, *Siberian Transport University*

Yury P. Pokholkov, *Tomsk Polytechnic university, Association for*

Engineering Education of Russia

Kseniya K. Tolkacheva, *Association for Engineering Education of Russia, Tomsk Polytechnic University*

Jose Carlos Quadrado, Mr. P.E., *Instituto Superior de Engenharia do Porto*

AEER Accreditation of Educational Programs—Quality Assurance Aims and Requirements

Kseniya K. Tolkacheva, *Tomsk Polytechnic University, Association for*

Engineering Education of Russia

Yury P. Pokholkov, *Tomsk Polytechnic University, Association for*

Engineering Education of Russia

Sergey B. Mogilnickiy, *Tomsk Polytechnic University*

Maria Yurievna Chervach, *Tomsk Polytechnic University*

Jose Carlos Quadrado, Mr. P.E., *Instituto Superior de Engenharia do Porto*

Triple-Helix and International Collaboration to Design and Implement an Outcomes Based Engineering Curriculum to Better Serve Stakeholders in Valparaíso-Chile

Uriel Ruben Cukierman, *IFEES*

Lueny Morell, *InnovaHiEd*

Rene Alejandro Noel, *Universidad de Valparaíso*

Roberto Munoz, *Universidad de Valparaíso*

Eduardo Vendrell Vidal, *Polytechnic University of Valencia*

Carlos Becerra, *Escuela de Ingeniería Civil Informática, Universidad de Valparaíso*

Carmen Gloria Prado, Mg., *Universidad de Valparaíso*

IEET’s Mentoring of Myanmar in Engineering Accreditation System

Mandy Liu, *Institute of Engineering Education Taiwan (IEET)*

Liang-Jenq Leu, *Dept. of Civil Engineering, National Taiwan University*

Charlie Than, *Myanmar Engineering Council*

Comparison of Surveying Engineering Education in USA and Turkey

Esra Tekdal Yilmaz, *Pennsylvania State University, Lehman*

10:15 a.m. – 11:45 p.m.

Concurrent Paper Tracks Session I - Study Abroad Programs
ROOM 263

The Case of an Electrical and Computer Engineering (ECE) Department in the Internationalization Process of a Research I Public Institution

Fabiola P. Ehlers-Zavala, *Colorado State University*

Anthony A. Maciejewski, *Colorado State University*

Implementing and Integrating International Research into the Engineering Curriculum at Lincoln University, Pennsylvania and the University of the West Indies, Trinidad

Monica Gray, P.E., *Lincoln University*

Constance Loretta Lundy

Toward Success of Collaborative Program In School of Engineering Between the US and China

Jeongkyu Lee, *University of Bridgeport*

Sarosh H. Patel, *University of Bridgeport*

Brian Lim, *University of Bridgeport*

Roger Dianlei Geng, Ph.D., *Wuhan University of Science and Technology*

Zhigang Jiang, *Wuhan University of Science and Technology*

Strategies for Increasing Student Participation in International Programs

James N. Warnock, *Mississippi State University*

Galyna Melnychuk, *Mississippi State University*

The Challenges and Lessons Learned in Establishing a Travel Course

Yanjun Yan, *Western Carolina University*

Paul M. Yanik, *Western Carolina University*

Sudhir Kaul, *Western Carolina University*

Chip W. Ferguson, *Western Carolina University*

Robert D. Adams, *Western Carolina University*

Wes Stone, *Western Carolina University*

Hugh Jack, *Western Carolina University*

Jeffrey L. Ray, *Western Carolina University*

Best Practices in Globalizing Engineering Students

Allison Wright, *Texas Tech University*

Ashley Nicole Haseley, *Texas Tech University*

Comparison of Two Project-Based Learning Experiences in Panama City, Panama

Aaron Richard Sakulich, *Worcester Polytechnic Institute*

10:15 a.m. – 11:45 p.m.

Concurrent Paper Tracks Session I - Curriculum
ROOM 264

Administering A U.S. Based M.S. Degree in Kilimanjaro, Africa—A Global Benchmarking in Regulatory Science

Mitchell L. Springer, PMP, SPHR, *Purdue University, West Lafayette*



Kari L. Clase, *Purdue University, West Lafayette*
Lauren Ann Terruso, *Purdue University*

The Pathway to Systems Education for the Global Engineer

Alice F. Squires, *Washington State University*
Jon Patrick Wade, *Stevens Institute of Technology (School of Systems & Enterprises)*
Nicole A. C. Hutchison, *Stevens Institute of Technology*

A Localized National Engineering Education and Research Outreach Model for Engineering Workforce Pipeline

Otsebele E. Nare, *Hampton University*
Vitaly Khaykin, *Hampton University*
Hoshang Chegini, *Hampton University*
Chandra T. Oaks-Garcia, *Time Out 4U, Inc.*
Adeyinka A. Adeyiga, *Hampton University*
Vadivel Jagasivamani, *Hampton University*

Bachelor Degree Program “Software Engineering” in the Higher School of Economics: Background and Perspectives

Sergey M. Avdoshin, *National Research University Higher School of Economics*
Valery V. Shilov, *National Research University Higher School of Economics, Moscow, Russian Federation*
Sergey A. Silantiev

Developing Innovative Interdisciplinary Biomedical Engineering Programs in Nigeria: Lessons Learned

David W. Gatchell, Ph.D., *Northwestern University*
Robert Linsenmeier, *Northwestern University*
Matthew R. Glucksberg, *Northwestern University*
Robert L. Murphy, *Northwestern University*
Akinwale Oladotun Coker, P.E., *University of Ibadan*
Akinniyi A. Osuntoki, *University of Lagos, Lagos, Nigeria*

Individual Peculiarities of Engineering Students Attending Minor Degree Programs—Research on Psychology and Education

Farida Tagirovna Shageeva, *Kazan National Research Technological University*
Inna Mikhailovna Gorodetskaya, *Kazan National Research Technological University*
Liliya Vasilievna Prikhodko

A Global Framework for Understanding Cross Cultural Teaching Experiences Gained in Japan

Douglas Moore Schutz, *Tokyo University of Science*
Dante Dionne, *Korean Air*
Yong-Young Kim, *Konkuk University*

11:45 a.m. – 1:00 p.m.

Networking Lunch

Sponsored by The Boeing Company
ROOM 261

Presenter: Candice Smith

Director - Global Engineering and External Technical Affiliations

1:00 p.m. – 2:15 p.m.

Partner Organization Plenary II - UNESCO

ROOM 260

2:15 p.m. – 2:45 p.m.

Networking Break

ROOMS 260 FOYER

2:45 p.m. – 4:30 p.m.

Concurrent Paper Tracks Session II - Outreach

ROOM 262

Learning Off the Grid: Implementing Engineering Service Projects in Developing Countries to Achieve Student, Faculty, and Community Outcomes

Paul John Ackerman, Jr., P.E., *Virginia Military Institute*
Tim Moore, P.E., *Virginia Military Institute*
Tyler Adam Brickles

The Global Student Forum: A Model for Developing Student Leaders in Engineering Education

Libanos Redda, *SPEED (Student Platform for Engineering Education Development)*
Fabian Reichl, *SPEED*
Agustin Ferrario, *National Technological University, Resistencia Faculty, Argentina*
Rohit Kandakatla, *SPEED*
Dhinesh Balaji Radhakrishnan, *SPEED*

Preparing Globally-Competent and Competitive STEM Workforce of the 21st Century in the Global STEM Classroom®

Vitaliy Popov, *University of San Diego, The Global STEM Education Center, Inc.*
Larisa K. Schelkin, *The Global STEM Education Center, Inc.*
Russell Faux, *DSRA*

Multination Research Programmes: The UNESCO Unit Win in Humanitarian Engineering Outreach Case Study

Jane Goodyer, P.E., *Massey University*
Lizzie Miles, *Coventry University UK*
Anh Lan Ho Tran, *Coventry University*

The STEM Loop: Undergraduate Engineering Students Create a STEM Children’s Book

Leslie Seawright, *Texas A&M University at Qatar*
Ibrahim Hassan, P.E., *University of Texas, Austin*



2:45 p.m. – 4:30 p.m.

Increasing Diversity through Internationalization of Engineering Education
Rose-Margaret Itua, *Ohlone College*

What Underrepresented Minority Engineering Majors Learn from Co-Ops & Internships

Terrell Lamont Strayhorn, *The Ohio State University*
Royel Montel Johnson, *Center for Higher Education Enterprise*

Concurrent Paper Tracks Session II - Skills Development
ROOM 263

Building Global Infrastructure for Diversity and Inclusion in Engineering Education

Autumn Marie Reed, *University of Maryland, Baltimore County*
Renetta G. Tull, *University of Maryland, Baltimore County*
David A. Delaine, *Universidade de São Paulo*
Darryl N. Williams, *Tufts University*
Rovani Sigamoney, *UNESCO*

Understanding International Perspectives in Science and Engineering Ethics
Thomas M. Powers, *University of Delaware*

Enhancing Multiple Thinking through the Engineering Design Process

Jaby Mohammed, *Petroleum Institute*
Mary Ragnhild Hilja Hatakka, *Petroleum Institute*

An Empirical, Comparative Approach to Engineering Ethics (Education) in International and Cross-Cultural Contexts—A Study Concerning Chinese Engineering Students' Knowledge of and Views Concerning Contents and Concepts Related to Engineering Ethics

Rockwell Franklin Clancy III, *University of Michigan-Shanghai Jiao Tong Joint Institute*
Gang Zheng, *University of Michigan-Shanghai Jiao Tong University Joint Institute*
David L. S. Hung, *University of Michigan-Shanghai Jiao Tong University Joint Institute*

The Design and Implementation of Engineering Leadership Programs: A Comparative Study

Hu Yu, *Shanghai Jiao Tong University*
Jiabin Zhu, *Shanghai Jiao Tong University*

The Attributes of Future 2030 Engineers in Qatar for Innovation and Knowledge Based Economy

Mahmoud Abdulwahed, *Qatar University*

Empowering Women in Engineering

Saud A Ghani, *Qatar University*

2:45 p.m. – 4:30 p.m.

Concurrent Paper Tracks Session II - Courses
ROOM 264

Australasian Partnership in a First Year Engineering Course: Deakin University and Wuhan University of Science and Technology

Sivachandran Chandrasekaran, P.E., *Deakin University*
John Matthew Long, *Deakin University*
Yanan Wang, P.E., *School of Engineering, Deakin University, Waurin Ponds, Geelong, Victoria, Australia*
Junior Nomani, *Deakin University*
Qiang Zhao, *Wuhan University of Science and Technology*
Zhigang Jiang, *Wuhan University of Science and Technology*
Roger Dianlei Geng, Ph.D., *Wuhan University of Science and Technology*
Bernard Rolfe, *Deakin University*

Supporting STEM Knowledge and Skills in Engineering Education—The PELARS project

Dorian A. Cojocaru, *University of Craiova*
Anna Friesel, *Technical University-Copenhagen*
Daniel Spikol, *Malmö University*

Enhancing Undergraduate Student Learning Experience in an Environmental Engineering Course through Use of Technology and Industry Partnership

Lokesh P Padhye, *The University of Auckland*

The Global Online Laboratory Consortium and its Role in Promoting a Global Cloud of Cyber Physical Laboratories

Michael E. Auer, *CTI Villach, Austria*
Abul K. M. Azad, *Northern Illinois University*

Singapore-U.S. Tactical All-Inclusive Navigation (SUSTAIN) Collaborative innovation

Frederick C Webber, *Air Force Research Laboratory*
KelseyLee Hunter Schafer, *Air Force Research Laboratory*
Eric T. Vinande, *Air Force Research Laboratory*
John P. McIntire, *US Air Force Research Laboratory*
Kristin L. Wood, *Singapore University of Technology and Design (SUTD)*
Daniel D. Jensen, *U.S. Air Force Academy*
Shaohui Foong, *Singapore University of Technology and Design*
Wai Yong Chue, *DSO National Laboratories*
Yaohui Li, *DSO National Laboratories*
Kevin Ang, *Temasek Laboratories @ National University of Singapore*
Richard H. Crawford, P.E., *University of Texas, Austin*
Gabriel Hoongwen Wong, *DSO National Laboratories*

India and Japan Joint Project-Based Learning -What was Learned from the Design Thinking Workshop

Ayano Ohsaki, P.E., *Okayama University*



**Teaching Oral Communication at a Russian University:
Helping English Language Learners Present their Engineering Designs**

Jennifer Craig, *Massachusetts Institute of Technology*

**Experience of Teaching an Introductory Biomedical Engineering
Course for Undergraduate ECE Students in Pakistan**

Ijlal Haider, *The University of Lahore*

Farhan Ahmad, *UOL*

Nishwa Fayyaz, *Virtual University, Pakistan*

Using Service Oriented Remote Laboratories in Engineering Courses

Hamadou Saliah-Hassaneing., *TELUQ -University of Quebec*

Mamane Moustapha Dodo Amadouing, *École de technologie Supérieure*

Maarouf Saad, *Ecole de Technologie Supérieure*

Willie K. Ofosu, *Pennsylvania State University, Wilkes-Barre*

4:15 p.m. – 5:30 p.m.

Partner Organization Plenary III

*Presented by the International Federation of Engineering Education Societies (IFEES), Global Engineering Deans Council (GEDC), and SPEED
ROOM 260*

Moderator: Michael Auer

IFEES President Elect, 2015–2016

Carinthia University of Applied Sciences

Villach, Austria

Trends in International Engineering Education Research

As the world has grown more intimately interconnected through the development of engineering transportation and communication networks, the trends in education research internationally have also begun to converge. Increasingly, colleges of engineering are focusing on student-centered, project-based, experiential, cooperative learning models. Moreover, team-based and interdisciplinary design and human-centered design have become increasingly common among engineering curricula globally. Finally, the enablement of inter-continental project teams spanning multiple universities through web resources, video conferencing, and short immersion experiences is another common theme. These innovations bode well for continuing to enculturate engineering students globally and for ensuring the continued cross fertilization of engineering curricula throughout the world. This presentation will highlight some of the most exemplary programs.

Presenter: Peter Kilpatrick

GEDC Chair, 2015–2017

McCloskey Dean of Engineering

University of Notre Dame

Notre Dame, Indiana, USA

The Role of IFEES in Promoting Engineering Education Worldwide

The International Federation of Engineering Education Societies (IFEES) has been created 10 years ago and, since then, has been growing in the number of members and reach. Almost 60 Engineering Education Associations from the five continents and several global companies are actively participating in our annual conferences and other activities that spread all over the year. IFEES also works with other organizations that serves specific communities, like the students, gathered in the Students Platform for Engineering Education Development (SPEED), and the deans, gathered in the Global Engineering Deans Council (GEDC). This presentation will describe our role in promoting Engineering Education worldwide.

Presenter: Uriel Cukierman

IFEES President, 2014–2016

Professor and Researcher

Universidad Tecnológica Nacional

Buenos Aires, Argentina

**Upcoming Global Events, Awards and Collaborations Facilitated
by IFEES and GEDC**

Since the inception of IFEES in 2006 and the GEDC in 2008, the two global organizations have served as a catalyst and facilitator for events and collaborations promoting the evolution of engineering education around the world. In addition to the annual WEEF & GEDC 2016 Seoul conference (November 6-10th, 2016), Dr. Hoyer will also touch on several upcoming events in South Africa, Colombia, China and India. Additionally, Dr. Hoyer will provide details on the 2016 GEDC Airbus Diversity Award, which recognizes individuals who make significant and meaningful contributions to bringing diversity into engineering education around the world. The GEDC and Airbus Group will be accepting nominations for this award through June 30, 2016.

Presenter: Hans-Jürgen Hoyer

IFEES Secretary General

GEDC Executive Secretary

Milwaukee, Wisconsin, USA

**The Coming of Age of SPEED: Battles and Conquests of the Student
Voice in Engineering Education.**

The International Federation of Engineering Education Societies (IFEES) has been created 10 years ago and, since then, has been growing in the number of members and reach. Almost 60 Engineering Education Associations from the five continents and several global companies are actively participating in our annual conferences and other activities that spread all over the year. IFEES also works with other organizations that serves specific communities, like the students, gathered in the Students Platform for Engineering Education Development (SPEED), and the deans, gathered in the Global Engineering Deans Council (GEDC). This presentation will describe our role in promoting Engineering Education worldwide.

**Presenters:**

Avneet Hira

Vice President - Educational Content, SPEED

Graduate Student in the School of Engineering Education at Purdue University

Dhinesh Radhakrishnan

Chair, SPEED Global Student Forum

Graduate Student in the School of Engineering Education at Purdue University

5:30 p.m. – 6:30 p.m.

Closing Reception and Poster Session

CONVENTION CENTER

ROOM 261

The Closing Reception and Poster Session is designed to provide attendees with the opportunity to network, dialog with the partner organizations and learn about selected international programs.

Note: The partnering organizations and the following presenters are invited to set up their displays for the Poster Session in Room: 261 from 3:00 PM to 5:15 PM

Best Practices of Engineering Education Internationalization in a Russian Top-20 University

Julia Ziyatdinova

Artem Bezrukov

Phillip Albert Sanger, *Purdue University, West Lafayette*

Petr Osipov

Cross Cultural Diversity in Engineering Professionals—Russia, India, America

Julia Ziyatdinova

Artem Bezrukov

Phillip Albert Sanger, *Purdue University, West Lafayette*

Petr Osipov

Global Undergraduate Engineering Curriculum for the Future @ Prince Mohammad Bin Fahd University (PMU) Kingdom of Saudi Arabia

Jamal Nayfeh, *Dean of Engineering, Professor of Mechanical Engineering*

VIRTUAL SESSIONS**Concurrent Virtual Sessions**

10:15 a.m. – 12:00 p.m.

The Role of the Socio-Psychological Disciplines in The training of Engineers (KNRTU Experience)

Nailya Sh. Valeyeva, *Kazan National Research Technological University*

Roman V. Kupriyanov, *Kazan National Research Technological University*

Elvira R. Valeyeva, *Kazan National Research Technological University*

Establishing Partnerships for Global Service Learning in Engineering

Jeffrey R. Seay, *University of Kentucky*

John Christopher Higgins, *University of Kentucky*

Chandni A. Joshi, *University of Kentucky*

Sarah Frances Willett, *University of Kentucky*

A Comparison and Evaluation of Aeronautical Engineering Learning Outcomes Using an Airborne Flight Laboratory and a Flight Simulator Laboratory

Raymond Colin Lewis, *University of New South Wales at the Australian Defence Force Academy*

Matthew Garratt, *University of New South Wales*





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