



03. Engineering education – latest trends for engineering and sustainable development,

Dr. Hans J. Hoyer, Secretary General  
IFEES, International Federation of  
Engineering Education Societies





WFEO / FMOI

# WFEO Symposium

## Celebrating 50 years of Engineering Leadership

March 7<sup>th</sup> 2018

# Engineering Education – latest trends for engineering and sustainable development

**Hans J. Hoyer, Ph.D.**

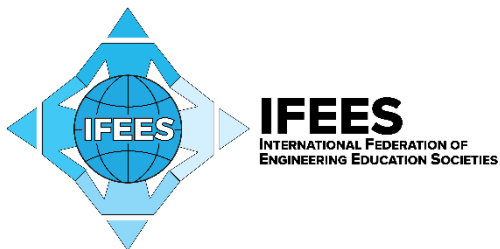
Secretary General

International Federation of Engineering Education Societies (IFEES), ifees.net

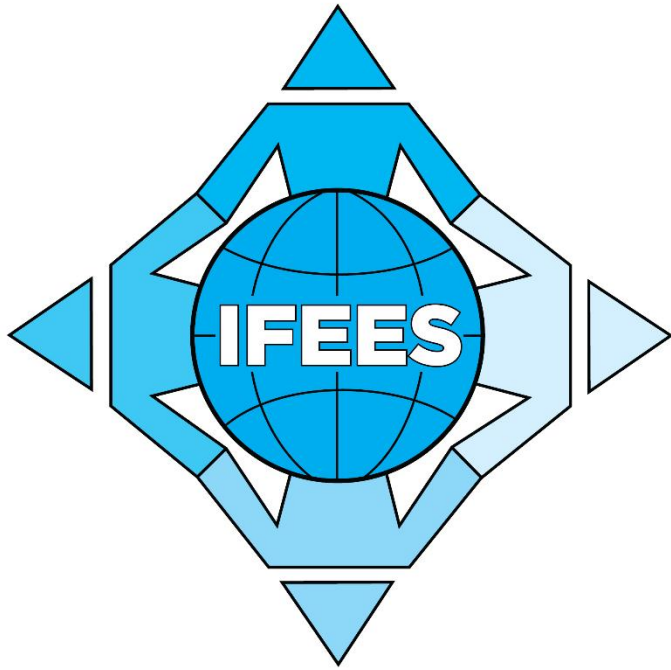
Executive Secretary

Global Engineering Deans Council (GEDC), GEDCouncil.org

Resident Scholar in Global Engineering



# INTERNATIONAL FEDERATION OF ENGINEERING EDUCATION SOCIETIES



**INTERNATIONAL FEDERATION OF  
ENGINEERING EDUCATION SOCIETIES**

**Vision: We are the collective voice and change agent for achieving relevance, excellence, equity, access and diversity in engineering education worldwide.**

**Mission: IFEES works to increase cooperation and mutual trust among engineering education stakeholders from across the globe. Our aim is to join forces and work towards shared objectives, accomplishing goals that are beyond our individual reach.**

# SOME OF OUR IFEES MEMBERS





# IFEES Leadership



**Michael Auer**  
President  
2016-2018  
Austria



**Ramiro Jordan**  
President-Elect  
2017-2018, United  
States of America



**Uriel Cukierman**  
Immediate Past President  
2016-2017  
Argentina



**Hans-Jürgen Hoyer**  
GEDC Executive Secretary  
IFEES Secretary General  
United States of America

## Vice Presidents

### First Vice President & Treasurer

Tania Bueno  
2017-2019, Brazil (i3G)

### Student Affairs

Javier Cano  
2017-2019, Colombia (SPEED)

### Diversity & Inclusion

Khairiyah Mohd-Yusof  
2016-2018  
Malaysia

### Industry & Academia Relations

K. Manivannan  
2016-2018  
India

## Executive Committee

Paul Marca  
2017-2019, United States of America (IACEE)

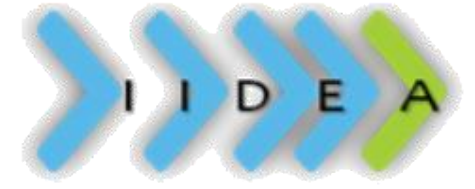
Michael Milligan  
2016-2018  
United States of America

Luis Manuel Sánchez Ruiz  
2017-2019, Spain (SEFI)

Christina White 2016-2018  
United States of America

Yao Zheng  
2016-2018  
China

# INTERNATIONAL INITIATIVE FOR DEVELOPING ENGINEERING ACADEMICS (IIDEA)



## Workshop Topics Include:

- Curriculum development and innovation
- Strategy, metrics, and accreditation
- Innovative teaching and learning
- New technologies and pedagogies

## Who We Are:

- Global leadership training institute
- Faculty development to transform EE
- IFEEES/SEFI collaboration
- Choose workshop, tailor to local needs

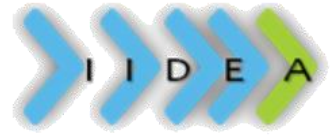
## Contact Information:

- IIDEA: Educating the Ideal Engineering Professor
- IFEEES.net/IIDEA
- Secretariats: IFEEES (Hans J Hoyer) and SEFI (Françoise Côme)





# IIDEA CAPACITY BUILDING - WEBINARS



## INDUSTRY/UNIVERSITY COLLABORATION

**MARCH 2018**

### **Introduction**

K. Manivannan  
IFEES Vice President of Industry/Academia  
Relations  
India

### **Speakers**

P.J. Boardman  
Director of Education Marketing at MathWorks

Xavier Fouger  
Senior Director of Global Academia Programs  
at Dassault Systèmes  
France



register & watch at [ifees.net/webinars](http://ifees.net/webinars)

# CAPACITY BUILDING AT TSINGHUA UNIVERSITY



- 7<sup>th</sup> year of capacity building workshops at Tsinghua University (China)
- Facilitators annually come from Africa, Asia Europe, North America and Latin America and share best practices; UNESCO has also facilitated workshops
- Topics range from authentic learning, to training for professional competency, situated learning strategies and more
- Workshop series each year are tailored to the needs and goals of the local university → globally competent, locally relevant





# ENGAGING ENGINEERING STUDENTS

## Student Platform for Engineering Education



SPEED

Vision: SPEED strives to empower students to become a factor of change in EE by providing them with the skills, knowledge, and resources necessary to become a global engineer and show them how they can think globally and act locally.

Mission: Through engineering education initiatives and collaboration with academia, industry, society and government, SPEED is committed to improving the future of engineering education whilst embracing the considerable engineering challenges being faced in the 21st century.



[worldspeed.org](http://worldspeed.org)



@SPEEDOrg



@SPEEDInternational

## Other Student Members



S C A L E

Embrace! Empower! Engineer!



**Engineers for a  
Sustainable World**

DESIGN • EDUCATE • BUILD

# Organizations and Events

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VIII World Engineering Education Forum (WEEF)

X Global Engineering Deans Council (GEDC)

XV Global Student Forum (GSF)

I Global Career Fair (GCF)



# PEACE ENGINEERING



Prosperity



Sustainability



Social Equality



Cultural  
Diversity



Quality



Innovation &  
Entrepreneurship

# Peace Engineering

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Peace Engineering is a transdisciplinary effort emphasizing innovation and creativity, while stressing the importance of applying science and engineering to the solution of practical problems that advance social justice and sustainable, social, economic, and environmental solutions globally.

## How will we achieve Peace Engineering?

By focusing the development on

- key best practices
- measuring the outcomes
- focusing on impact

Our world will become a better place through the **systemic ethical and entrepreneurial practice** of Engineering.



# GLOBAL ENGINEERING DEANS COUNCIL (GEDC)

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**Vision:** To enhance the capabilities of engineering deans to transform schools in support of societies in a global economy

**Mission:** To serve as a global network of engineering deans, and to leverage on the collective strengths, for the advancement of engineering education and research



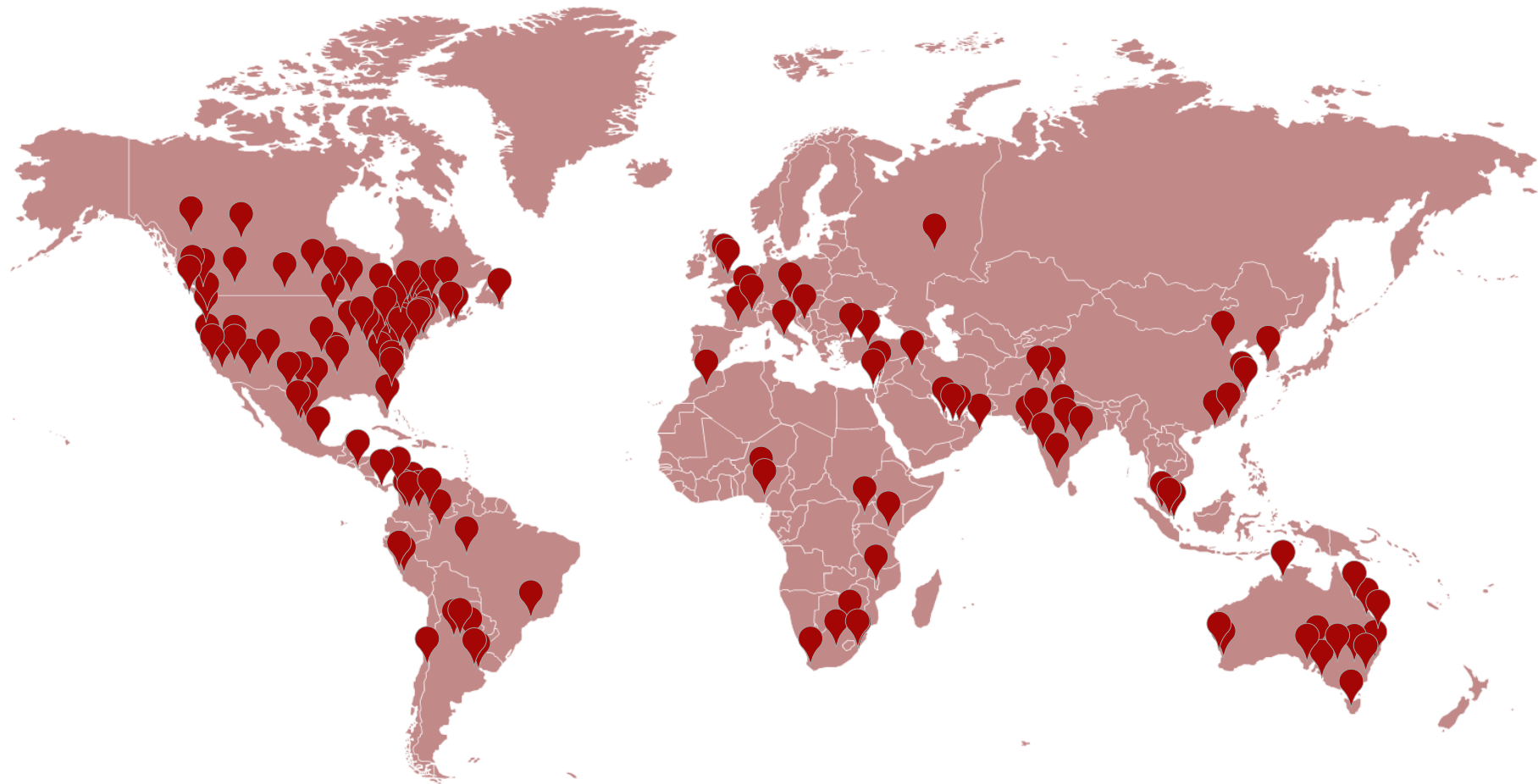


1 Institutional leadership

2 Outcomes based education

3 Industry, stakeholders, and policy leadership

4 Membership growth and strategy and financial stability



**500+**

Network

**40+**

Countries



**Natacha DePaola**  
GEDC Chair (2017-2019)  
Illinois Institute of Technology  
United States of America



**Peter Kilpatrick**  
Immediate Past Chair (2017-2018)  
University of Notre Dame  
United States of America



**Ahmet Öztaş**  
Secretary/Treasurer (2017-2018)  
Ishik University  
Kurdistan/Iraq



**Hans-Jürgen Hoyer**  
GEDC Executive Secretary  
IFEES Secretary General  
United States of America

## Executive Committee

### - 2018

Mushtak Al-Atabi, Malaysia  
Margaret (Kathy) Banks, USA  
Kee Chaing Chua, Singapore  
Kunwoo Lee, South Korea  
Sirin Tekinay, Turkey  
Rupesh Vasani, India

### - 2019

Theo Andrew, South Africa  
Mark Hoffman, Australia  
Peter Jimack, United Kingdom  
Guillermo Oliveto, Argentina  
Julia Ross, USA  
Xiao Wei Sun, China

### - 2020

Ken Ball, USA  
Christian Bolu, Nigeria  
Alejandro Jadresic, Chile  
Sushma Kulkarni, India  
Jianbin Luo, China  
William Rosehart, Canada



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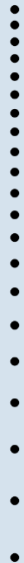
# FURTHER COLLABORATIONS



## M o U s



United Nations  
Educational, Scientific and  
Cultural Organization



WFEO / FMOI

## Partnership



THE WORLD BANK

# WEEF-GEDC 2018 ALBUQUERQUE

World Engineering Education Forum

Global Engineering Deans Council Conference

## Peace Engineering

Prosperity, sustainability, social equity, diversity,  
culture quality, innovation and entrepreneurship

November 12-16, 2018 • Albuquerque, USA

[WEEF-GEDC2018.ORG](http://WEEF-GEDC2018.ORG)





# IFEES AND GEDC CORPORATE PARTNERS



# Thank you for your attention

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