



# CAPE

**Council for Access to the  
Profession of Engineering**

*Putting Canada First*

## **ENGINEERING KNOWLEDGE CONFERENCE 2007**

**Theme: Transferability for  
Transformation - Mobilizing  
Global Engineering Experience**

**November 24, 2007**

**Oakham House (Thomas Lounge)  
Ryerson University, 63 Gould Street  
Toronto, Canada**



**Council for Access to the  
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**Conference Organizing Committee**

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Gurmeet Bambrah, CAPE Coordinator (Acting  
Executive Director)  
Nikhat Rasheed, Communications Specialist  
Ali Mirzaee, IT/ Database Specialist  
Raju Mohandoss, Labour Market Specialist  
Muhammad Jahanzeb Khan, Technical Consultant

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**About CAPE**

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CAPE's mission is to achieve the full economic,  
civic and community participation of immigrants  
with engineering backgrounds (IEBs) through the  
utilization and upgrading of their global  
engineering education, skills and experience.

CAPE has a direct membership of over 1,200 and  
a coalition membership of over 10,000 immigrants  
with engineering backgrounds (IEBs) across  
Canada.

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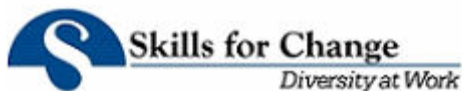
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## MESSAGE FROM CAPE PRESIDENT

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Greetings! It is with great pleasure that I welcome all participants to CAPE's inaugural Engineering Knowledge Conference and Annual General Meeting 2007.

History is being created every day. From its humble beginnings as a volunteer-driven project to a successful, incorporated non-profit organization, CAPE has come a long way. As a collective of over 1,200 globally qualified and experienced immigrants with engineering backgrounds as well as a community coalition of nearly ten thousand members, CAPE is in a position today to hold this Knowledge Conference. We are proud.

We have had an exciting first year. Our first Executive Board elected in May 2006 has benefited from extensive training during our first year of incorporation. We have finalized our first independent Strategic Plan for 2007/2008 in full consultation with CAPE members, strategic partners and other stakeholders and we have embarked on the implementation of our multi-stakeholder driven employment strategy. The coming year is going to be a challenging one, as we move to strengthen our growing membership and concentrate on achieving their full labor market participation and knowledge mobilization so that we can Put Canada First.

This year's Engineering Knowledge Conference seeks to discuss engineering knowledge management and mobilization under globalization. We're hoping to elicit some interesting perspectives and possible solutions to the crisis of the lack of global transferability of engineering skills and experience. Despite the various international accords signed, engineers face much difficulty transferring their skills across borders, especially to Canada. We're incredibly fortunate to have representatives from leading world engineering organizations on our 'Transferability for Transformation' Panel. I am certain the discussion will be a very rich one!

In addition, our engaging guest addresses from Honorable Dr. Jean Augustine, Ontario's Fairness Commissioner, David Zimmer, MPP-Willowdale and Mark Zimny, President, Promotion Engineering Ltd. will surely interest conference attendees. Our Engineering Employer Networking Event aims to bring together the Canadian Engineering Industry and global engineering knowledge workers in a forum where they can explore mutual requirements and resources in terms of engineering employment.

Finally, we are proud to have achieved a major milestone: our first Annual General Meeting!

An event like this for such a young organization requires both vision and commitment. Special thanks are extended to our management and volunteers who dedicated countless hours to ensure this conference goes smoothly. I hope you enjoy it.

*Saeed Ziaee, President, 2006 – 2007*  
*November 24, 2007*



## CONFERENCE PROGRAM

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08:00 - 09:00	Community Coalition Breakfast ( <i>Open to Coalition Members Only</i> )
08:30 - 09:00	Registration and Breakfast
09:00 - 09:30	Opening Presentation: Mobility of Engineers – A Global Overview
09:30 - 11:30	"Transferability for Transformation - Mobilizing Global Engineering Experience" Panel
11:30 - 12:00	Future Directions - Where do we go from here?
12:00 - 13:00	<p>Buffet Luncheon and Guest Speakers:</p> <p>David Zimmer, MPP-Willowdale, Parliamentary Assistant to the Attorney General (<i>12:05 – 12:25</i>)</p> <p>Honorable Dr. Jean Augustine, Ontario's Fairness Commissioner (<i>12:25 – 12:45</i>)</p> <p>Mark Zimny, President and CEO, Promotion Engineering Ltd. (<i>12:45 – 12:55</i>)</p>
13:00 - 14:30	CAPE's Annual General Meeting ( <i>Open to the public</i> )
14:30 - 17:30	Engineering Employer Networking Event ( <i>Open to CAPE members, employer representatives, job developers, recruiters and service providers</i> )
14:45 - 15:15	Demonstration: Job Development Tools ( <i>Open to all attendees</i> )
17:30 - 17:45	Closing Remarks and Wrap Up

## OPENING PRESENTATION

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**Title:** Mobility of Engineers – A Global Overview

**Presenter:** Dr. Gurmeet Bambrah, Acting Executive Director and Principal Researcher, CAPE

**Location:** Canada

**Summary:** This presentation is based on research that CAPE is undertaking on mobilizing the global engineering knowledge of its membership of leading edge migrant workers drawn from over 80 countries in Canada. It focuses on a global overview of transferability of engineering education and experience around the world. Using a systematic, integrated and strategic analysis this presents a framing of the education, experience, societal, cultural and governance mechanisms that are being used to standardize education and the practice of engineering in different parts of the world.

**Biography:** Gurmeet Bambrah PhD, F.Eng (UK), R.Eng (consulting Engineer, Kenya) has over 20 years' global engineering experience mostly in the field of water and wastewater engineering, community-based water and environmental sanitation for the urban poor and action research. She holds a Bachelor's degree in engineering, a Master's in Construction Management and a Doctorate in engineering economics, all from the UK.

She has served as the Vice-President of the International Rainwater Catchment Systems Association and is a member of the Association of Consulting Engineers of Kenya and the Institution of Engineers of Kenya. She is also a Fellow of the Institution of Civil Engineers (London, England). At present she is the acting Executive Director and principal researcher at CAPE Council for Access to the Profession of Engineering.

## PANEL DISCUSSION

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**Title:** International Mobility of Engineers

**Presenter:** Dr. Gue See Sew, Chairman, APEC Engineering Coordinating Committee

**Location:** Malaysia

**Summary:** This presentation focuses on the importance of international mobility for engineers, international agreements promoting mobility for engineers and the Australian and Malaysian experiences with Multi-lateral and Bi-lateral Agreements.

**Biography:** Ir. Gue See Sew, PhD is the International Chairman of the Coordinating Committee of APEC Engineers, President of the Institution of Engineers, Malaysia



(IEM) and Head Commissioner of ASEAN Engineers Register. He is an Honorary Fellow of ASEAN Federation of Engineering Organisations, Founding Fellow of the ASEAN Academy of Engineering & Technology and the World Federation of Engineering Organisations representative to the International Consortium on Landslides. Dr. Gue is the Managing Director of a geotechnical consulting firm and CEO/Group Managing Director of a one-stop engineering specialist's service centre. He holds an Honorary Doctorate in Science from the University of Strathclyde and was awarded the Construction Professional of the Year Award, Malaysian Construction Industry Excellence Awards 2006.

**Title:** How are the transferability of experience and the transformation of institutional practices to be facilitated under a global framework?



**Presenter:** Eng. Exaud Mushi, Chairman, Group of Africa Member Associations, FIDIC

**Location:** Tanzania

**Summary:** This presentation discusses the demand for engineers across the world under the globalization framework. While the performance of international engineers has been good, there are barriers to their movement based in regulation and mistrust. FIDIC should commission study to review various laws and regulations and propose revisions and encourage governments to change.

**Biography:** Eng. Exaud Mushi Exaud Mushi, R.Eng is the Managing Director of NORPLAN Tanzania Limited, holds BSc and MSc (Highway Engineering) degrees from University of Darussalam. He is a Fellow of the Institution of Engineers Tanzania and a member of Association of Consulting Engineers and has twenty four years of engineering practice, covering design and construction supervision of projects, contract management, research and study projects and contracting work. At present, he is the Chairman of FIDIC – GAMA (Group of Africa Member Associations). He is also Past Chairman of the Association of Consulting Engineers Tanzania and served as member of several committees and councils and is a Member of the Board of Directors, Engineering Registration Board Tanzania.

**Title:** Global Mobility for Engineering Professionals

**Presenter:** John M. Boyd, President, International Federation of Consulting Engineers (FIDIC)

**Location:** Canada

**Summary:** This presentation reviews and relates the process of professional registration in Canada to the requirements of the consulting industry in this country and suggests ways in which the process might be streamlined.



**Biography:** John M. Boyd P.Eng., PhD has been in the consulting engineering business for 32 years with Golder Associates. 15 of those years were in senior management roles including Operating Company President and most recently, VP of Operations at the corporate level. John has participated

as a Director in several of the Boards of companies in the Golder group, was a Director and later Chairman of the Waterloo Centre for Groundwater Research, Member of the Faculty Advisory Board of McGill University Engineering Faculty, Director and Chairman of the Association of Consulting Engineers of Canada, and a Director and subsequently President of Peel Red Cross. He was recently Chair of the Steering Committee of an HRDC program to encourage young people to study Engineering at University, and is currently an active member of the Executive Committee and President of the International Federation of Consulting Engineers (FIDIC).

**Title:** How the engineering fraternity can facilitate standardization of global engineering experience

**Presenter:** Engr. Kadri Adebayo Adeola, Chairman, Capacity Building Committee, FIDIC

**Location:** Nigeria

**Summary:** This presentation discusses whether there is indeed a single engineering fraternity and agenda or if there are competing versions of them. It discusses the challenges within the engineering industry of reconciling disparate sizes, resources, and competing continental, regional, national and international interests. What is an African's perspective? How can the international community work together under FIDIC?



**Biography:** Engr. Kadri Adebayo Adeola has 32 years of civil engineering and project management experience in the fields of Structural Design, Water Resources Development, Water Supply Systems, Mass Housing Development, Training and Planning. He holds a postgraduate degree from Imperial College, London. He is a fellow of the Nigerian Society of Engineers and a member of the Project Management Institute. He is the Chairman, Capacity Building Committee of FIDIC and a member of the Executive Committee of FIDIC and the Nigerian Society of Engineers. He is past president of GAMA (Group of African Member Associations) FIDIC. At present he is the Managing Director, of Comprehensive Project Management Services Limited.

**Title:** Experience Evaluation for Licensing in Ontario

**Presenter:** Mike Dang PhD, Experience Review Committee, Professional Engineers Ontario (PEO)

**Location:** Canada

**Summary:** This presentation describes the Canadian regulatory model of practice, gives an overview of how the experience review is carried out and talks about the five quality-based experience criteria and shares new developments that are being proposed by the Licensing Process Taskforce of PEO.



**Biography:** Mike Dang, P.Eng, PhD, holds all his degrees from the University Of Manchester Institute Of Technology, UK in electrical engineering. Currently working with Hydro One Networks Inc. as an investment planner, Mike is one of the founding members of CAPE, an active community volunteer, obtained project funding and submitted several reports on access to professions and

trades issues including Police-Community Partnership, Learning Assessment - A Proposal, Admissions Into PEO - Proposal for an Appeals Process and has served on PEO Experience Review Committee since 2000.

***Nikhat Rasheed will be presenting a summary of the following speakers' comments at the conference that were unable to participate via web conference. Written statements enclosed.***



**Title:** Professional Competences and Global Recognition

**Presenter:** Dr. Jim Birch, CEng, Head of International Recognition, EC<sup>UK</sup>

**Location:** United Kingdom

**Statement:** As CAPE has observed in its invitation to this meeting there has been movement on the standardisation of academic qualifications which provide the underpinning knowledge of professional engineers, in particular the growing acceptance of the Washington Accord as a benchmark and the rapid growth in membership of the Accord. CAPE then posed the question, can something similar be applied to standardisation of engineering experience? The answer is,

yes it is possible, and it is already happening.

There are a number of national engineers' organisations, of which EC<sup>UK</sup> is one, which explicitly state their registration/licensure criteria in terms of professional competences (and there are other organisations where this is implicit) and have systems which directly assess the competence of engineers to safely practice at the professional level. The essence of the process is that it measures what an engineer knows (through a combination of education/training and experience) and is capable of doing rather than being overly concerned with how knowledge or skill was obtained. For the UK competence statements and outline procedures see [http://www.engc.org.uk/documents/CEng\\_IEng\\_Standard.pdf](http://www.engc.org.uk/documents/CEng_IEng_Standard.pdf)

In 2003 the national organisations which now make up the International Engineering Alliance (a grouping of the members of the Washington, Sydney and Dublin Accords and the Engineers Mobility Forum (EMF) and APEC Engineer) set up a working party to look at professional competences. It found good convergence between the views expressed by a number of countries and after intensive work drafted an agreed set of professional competence statements applicable to professional engineers. Professional criteria for engineering technologist and engineering technician were also agreed by this working party. At the business meetings in 2005 the working party report was reviewed and the competence statements were adopted. These competences, and the associated knowledge expected of a graduate from an engineering programme (the graduate attributes) can be seen at [http://www.ieagreements.org/IEM\\_Grad\\_AttrProf\\_Competencies\\_v11\(2\).pdf](http://www.ieagreements.org/IEM_Grad_AttrProf_Competencies_v11(2).pdf).

The current situation is that over a dozen national engineers' organisations have agreed on the definition of a professional engineer and have done so by means of objective outcome statements. This gives an excellent basis on which to develop inter-country recognition of engineers, whether



through international registers (as set up by EMF and APEC), bilateral agreements, or as the benchmark for processing individual applicants for national registration/licensure. Assessment of competences is not a trivial business and it is not expected that organisations will have identical procedures. What is required is that the process makes a transparent and objective measurement of competence, does not rely on unsatisfactory surrogates such as time-serving, and takes an holistic approach.

The Washington Accord was signed in 1989, originally by six national organisations. The subsequent growth and spin-offs, together with developments in the Asia Pacific region, led to interaction between increasing numbers of organisations which culminated in the setting up of biennial International Engineers Meetings. These became increasingly important and in 2007 the situation was formalised by setting up the International Engineering Alliance and the appointment of a permanent secretariat (see <http://www.ieagreements.org/>). The IEA is tightly focussed on matters related to accreditation of engineering education and the recognition of professional engineers, technologists and technicians. It consists of the national organisations which regulate these matters in their own countries and who have responsibility for implementing any agreements made within the IEA.

By keeping governments out of the picture the IEA ensures that the global process is run by engineers for the benefit of engineers and that any agreement made has buy-in from the national engineer organisations, rather than being imposed from above. It also means that progress is far faster than would be possible by going through inter-governmental negotiations. Mobility will be best enhanced by supporting the focussed work of the IEA rather than being buried in wide-ranging GATS discussions.

**Biography:** Jim Birch, PhD is a metallurgist by training, did research on engineering ceramics, and is a foundry-man by profession. Following an extended period in contract R&D working on improving casting processes, he spent fourteen years with a foundry trade association, latterly as its Secretary, providing marketing and technical services and representing the industry at home and abroad. He joined the Engineering Council in 2000 and is currently Head of International Recognition. His time is spent negotiating, monitoring and implementing mutual recognition agreements with overseas engineers' organisations and in dealing with the legislation which impacts on professional mobility and the supply of services. He is a member of the Board of the European Federation of National Engineering Associations.



**Title:** An Innovative Idea: World University of Technology

**Presenter:** Prof. Włodzimierz Miszański, President, World Federation of Engineering Organizations – Committee on Education and Training

**Location:** Poland

**Statement:** I would like to congratulate you and your organization for the upcoming CAPE Engineering Knowledge Conference on the topics which our committee and I personally are deeply interested in - solving the problems of the international mobility of engineers and the standardization of engineering practices. The questions posed for by CAPE to the panel really fundamental and more important,

practical. In my opinion one possible solution to easing the global mobility of engineers could be to create a World University of Technology (WUT) with the "preparation of engineers for worldwide mobility" as its main goal. I have presented this idea in its various forms to the WFEO and have published it in IDEAS (the WFEO-CET journal accessible online) that we could first form the WUT as a virtual university and evolve into a multi-campus university, towards a single campus full-scale university with unique world mobility oriented curricula and research programs. In the publication, I also suggested an internal WFEO discussion on the rationale, mission and tasks of WUT.

I was surprised by the spontaneous responses to the suggestion. I have received numerous emails and letters both expressing support and arguing against the idea. Most of the discussants connected the idea of WUT with mobility, education and standardization of global engineering experience. Encouraged by the response, I have tried to take this suggestions further by developing the idea of postgraduate courses led by experience 'international engineers' which can be provided at different institutions (being published in IDEAS No. 14, October 2007). I am also preparing a presentation for the 9<sup>th</sup> Congress on Engineering Education to be held in Malaysia in March 2009 where I hope to discuss certain organizational solutions supporting the idea of creating a World University of Technology.

**Biography:** Prof. Włodzimierz Miszański, Ph.D., D.Sc. is Professor of the Military University of Technology (Warsaw, Poland) and Director of Institute of Organization and Management. Prof. Miszański has 25 years experience in the postgraduate education of engineers, particularly in logistics and management and is author and co-author of more than 200 publications. He is a representative of Poland in the Studies, Analyses and Simulation Panel, NATO Research and Technology Organization, President of The Committee on Professional Development of Polish Federation of Engineering Associations, Chairman of the Steering Committee of the 5th World Congress on Engineering Education. Since 2005, he has been President of the WFEO-CET Committee.

## LUNCHEON GUEST SPEAKERS

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**Hon. Jean Augustine, PC, BA, M.Ed., LLD (Hon)**  
**Ontario Fairness Commissioner**

Hon. Jean Augustine was appointed as the first Fairness Commissioner for the Province of Ontario in March 2007. As the first African-Canadian woman to be elected to the House of Commons, she has served as Member of Parliament for Etobicoke-Lakeshore, Parliamentary Secretary to the Prime Minister, Secretary of State and Minister of State for Multiculturalism and the Status of Women, sat on several standing committees, and has been a Deputy Speaker.

She has shared served on the boards of York University, Hospital for Sick Children, Donwood Institute, Harbourfront Corporation and Congress of Black Women of Canada. In March 2007, she was named chair of the

Ontario Bicentenary Commemorative Committee on the Abolition of the Slave Trade.



**Hon. David Zimmer, MPP-Willowdale, Parliamentary Assistant to the Attorney General**

David Zimmer is the Member of Provincial Parliament for Willowdale. First elected in 2003, he is the Parliamentary Assistant to the Attorney General and serves on the Standing Committee on Public Accounts. In addition he has also served on the Standing Committee on Justice Policy and the Standing Committee on the Legislative Assembly.

David sits on board of St. John's Rehabilitation Hospital, volunteers for North York Meals on Wheels and. In March 2005, he received the Social Work Doctors' Colloquium's inaugural Award of Merit. David has served as the Chair of the Toronto Community Housing Corporation, Director of the Canadian Institute of International Affairs, President of the Alzheimer Society of Canada and Assistant Deputy Chairperson at the Immigration and Refugee Board of Canada.



**Mark Zimny, President and CEO, ProMation Engineering Ltd.**

Mark Zimny founded ProMation Engineering in 1995. Since then, he has evolved the company from a small start-up operation that specialized in automated tooling systems to a full capacity integration operation with a strong foundation in R&D in the area of robotics and factory automation systems. ProMation most recently developed high-level robotic tooling solutions for CANDU nuclear reactor.

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## **ENGINEERING EMPLOYER NETWORKING EVENT**

'Transferability for Transformation – Mobilizing Global Engineering Experience' is an issue that has far reaching implications for the Canadian engineering industry. CAPE's Engineering Employer Networking Event is aimed at bringing together the Canadian Engineering Industry and global engineering knowledge workers in a forum where they can explore mutual requirements and resources in terms of engineering employment. Our sincere thanks to the organizations that have expressed their support by participating in the event today; their presence is a sign of their commitment to diversity and recognition of global engineering skills.

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## **DEMO: CAPE JOB DEVELOPMENT TOOLS**

Join us in Room G at 2:45pm for a live demonstration of our innovative job development tool that is designed to be a job matching resource for Canadian employers and a self-assessment tool for IEBs!

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