



# UNESCO International Centre for Engineering Education



## Newsletter

Volume 5, Issue 3

November 1998

### From the Director

September 1998 was a hectic but satisfyingly fruitful time for me in running and attending a number of international conferences on engineering education in Europe. Readers will find reports on these meetings throughout this newsletter.

My general impression is that engineering education has become a critical issue in Europe and beyond, with many regarding the current status of society as having reached a crucial juncture. With the failing of the global economy, governments are cutting funding to publicly run universities, placing enormous pressure on the already fragile status of educational institutions. It is my personal belief that education is an important local and international asset, and that the dire consequences of such cuts to it will be obvious in the not too distant future. It is therefore of paramount importance that academics become united on this issue and object to these short-sighted economic rationalist policies. The UICEE is more than prepared to lead this cause to ensure that engineering education, which is a catalyst for wealth-creation, receives appropriate attention and funding.

While I was in Riga, Latvia, I was invited to visit the Latvian University of Agriculture in Jelgava, which is about 40kms southwest of Riga. The University, which is a Contributing Member of the UICEE, was established in 1939 on the grounds of the Jelgava Palace, a grand construction built in 1738 by the world renowned Italian architect Francisco Bartholomeo Rastrelli. The picturesque setting provides the 8000 students and staff with a unique environment and atmosphere that must surely facilitate any intellectual activity. I was pleasantly surprised to observe the tremendous effort that a small university can make to ensure the provision of high quality education for its students.

The visit was a delightful opportunity to discuss issues of importance to engineering education with many academ-

ics, and I am most grateful to my host and friend, Prof. Juris Pommers. It is my hope that one day in the not too distant future, we will jointly organise a seminar in this beautiful setting.

### Visit to Budapest

Last August the Director visited the famous Technical University of Budapest, one of a growing number of universities with an *Agreement on Collaboration* with the UICEE. The objective of the visit was to discuss ways to strengthen the collaboration between the two institutions and to consider future joint activities. The University's Rector, Prof. Dr Ákos Detrekői, has indicated interest in staging the *5th East-West Congress on Engineering Education* at the Technical University of Budapest in 2000 in collaboration with the UICEE. The proposal was received with sincere appreciation and will be considered in the context of decisions regarding the running of the *2nd Global Congress on Engineering Education*.

During his visit, the Director spent some time in the University's Centre for International Studies; he was briefed on the Centre's activities and discussed areas for possible collaboration.



Prof. Dimitar Dimitrov, Rector of the Technical University of Sofia, and A/Prof. Zenon J. Pudlowski, UICEE Director, signing the Memorandum of Understanding on partnership.

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### The Global Congress

In early September in the glorious city of Cracow, Poland, with summer indicating no firm intention of passing the sceptre to autumn, a new activity for the UICEE

UICEE Partners



GLASGOW



CALEDONIAN  
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took shape in the form of the first *Global Congress on Engineering Education*. Over 150 participants from 30 countries debated issues of, and approaches to, globalisation of engineering education.

The highlight of the Congress was the establishment of a project concerned with the development of a global curriculum for engineering education. The project will be jointly co-ordinated by the UICEE and the Caledonian Centre for Engineering Education.

During the Congress, the International Liaison Group for Engineering Education (ILG-EE) staged its *11th Annual General Meeting*, attended by more than 40 academics.

## UICEE Paper Awards

The now well-established presentation of awards for papers that are included in the proceedings of UICEE organised meetings and which are felt by registered attendees to make the most significant contribution to engineering education took place at the Global Congress Banquet on the closing evening of the meeting. The banquet was held within the magnificent setting of the medieval saltmine at Wieliczka, a site listed in the UNESCO World Heritage List. Five awards are typically presented in the categories: diamond, platinum, gold, silver and bronze, but with joint first place shared by three outstanding papers, and the bronze award shared by two papers, six awards were presented in the diamond, silver and bronze categories.

The six papers were:

- Diamond *Broad-based collaborative partnerships for technical interaction between academia, industry and non-engineering sectors*, by R. Kasuba and P. Vohra, Northern Illinois University, DeKalb, Illinois, USA.
- Diamond *New curricula of engineering directed to global engineering or to promote international co-operation of engineering education?*, by K. Detert, University of Siegen, Siegen, Federal Republic of Germany.
- Diamond *Educating engineers for the environment: a pilot study on how students assess the concept in engineering curricula*, by D.Q. Nguyen and Z.J. Pudlowski, Monash University, Melbourne, Australia.
- Silver *Multivariable control system design: making it more transparent*, by H.M. Schaedel and R. Bartz, University of Applied Sciences Köln,

Köln, Federal Republic of Germany.

Bronze *The computer is critical for globalisation of engineering education*, by B.L. Crynes, University of Oklahoma, Oklahoma, USA.

Bronze *Cross-border engineering practice*, by R.C. Jones, (formerly) National Society of Professional Engineers, Alexandria, Virginia, USA.

As Director of the UICEE, A/Prof. Pudlowski declined to accept the award, which was accepted by Ms Duyen Nguyen. The UICEE congratulates the authors of these papers for their outstanding work.

## Badge of Honour Awards

Within the suitably grand environs of the Wieliczka Saltmine, a scene evoking images of medieval grandeur, the Director was delighted to bestow the UICEE Badge of Honour Awards for distinguished contributions to engineering education, outstanding achievements in the globalisation of engineering education through the activities of the Centre, and, in particular, for remarkable service to the UICEE.

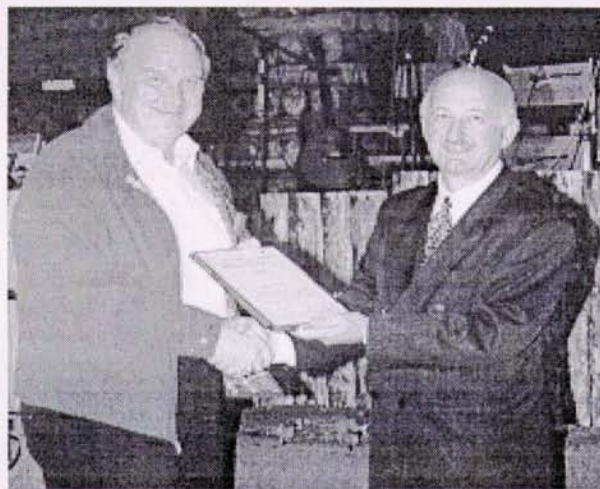
The eight recipients of the Silver Badge of Honour were Prof. Gearold R. Johnson, National Technological University (USA); Dr Russel C. Jones, Consultant (USA); A/Prof. Jerzy Cholewka, Royal Melbourne Institute of Technology (Australia); Prof. Stanislaw A. Mitkowski, University of Mining and Metallurgy (Poland); A/

Prof. Pavel Prokopovic, Technical University of Košice (Slovakia); Prof. Trevor W. Cole, The University of Sydney (Australia); Prof. Colin U. Chisholm, Glasgow Caledonian University (Scotland); and Prof. Alexander A. Minayev, Donetsk State Technical University (Ukraine).

We wish to congratulate those awarded for their personal achievements in engineering education.

## Congress Proceedings

Close to 20 keynote addresses, major contributions to engineering education by outstanding international academics, along with 120 regular papers, were presented at the *Global Congress on Engineering Education*, all of which are collated in the Congress Proceedings, a substantial tome that should prove to be an essential reference for some time to come. The papers present and discuss research and developmental activities



Dr Russel Jones receives the UICEE Silver Badge of Honour from the UICEE Director.

in engineering education carried out throughout the world. Particular emphasis has been placed on globalisation of engineering education to stress the importance and relevance of collaboration between universities worldwide. Of particular interest and value are the many papers from authors in developing countries and countries in political, economic and social transition. Some of these papers present considerable achievements made over the last few years, while others demonstrate that some of these countries still grapple with fundamental changes to be made to their systems of engineering education.

The Proceedings can be obtained through the UICEE by drawing a cheque for \$A120 (+ \$A10 for postage within Australia, and \$A20 for overseas postage) in favour of Monash University - UICEE, and sent to: Administrative Officer, UICEE, Faculty of Engineering, Monash University, Clayton, Victoria 3168, Australia.

## Urban Design Project

We are pleased to announce the establishment of a UICEE Urban Design and Education Programme (UICEE/UDEP), a special project for research and promotion of world-leading ideas in urban design and sustainable development, as well as for education and training in this area. Independence of any particular government or private sector group will allow the project to be a catalyst for change and to support a balanced approach to development to improve overall standards for everyone's benefit. It can also establish standards, promote better procedures and world best practice, and act as a source of independent advice for governments and the community.

In common with many countries, planning and development in Australia has undergone radical reforms in recent years. Basically, these reforms amount to a lessening of the regulatory and reactionary approach in favour of a performance-based system. We are presently in danger however of losing the benefits from planning reform with a retreat to regulation and control caused mainly by a lack of skill and preparedness to engage with a performance-based system. This is leading to a situation in which more and more projects are waiting on an appeal, and appeal delays are extending as the issues become more complex.

UICEE/UDEP will directly tackle this problem by assisting developers, designers, assessors and community representatives to make use of procedures and techniques that seek to minimise conflict and help to reach objective assessments. It will help local governments to develop a more strategic approach to planning and development issues, and it will work directly with the community to help them understand the potential benefits of new developments, as well as being able to better articulate the real issues of concern.

Mr Andrew Olszewski, of the Department of Infrastruc-

ture, has been approached to lead the team. Mr Olszewski is an internationally renowned authority on urban design and sustainable development and author of *Local Government Policy on Urban Design for Australia*. He is also a UICEE associate and consultant.

## Mannheim Conference

This year in Mannheim, Germany, saw the 100th anniversary of the Fachhochschule Mannheim, University of Applied Sciences Mannheim. To commemorate the anniversary the University's METEOR Centre staged an international conference in September, which was attended by close to 100 academics from 15 countries; over 80 papers were presented.

The University has established excellent links with local industry and the conference took advantage of this relationship by presenting several keynote addresses by industrial organisations such as ABB AG, Pepperl + Fuchs GmbH, and GMD Forschungszentrum Informationstechnik GmbH.

The academic programme was extremely strong, as was the organisation of the Conference, which was undertaken by staff and associates of the METEOR Centre.

Four German academics received the UICEE Silver Badge of Honour on this occasion. They were: Prof. Dr hc Dietmar von Hoyningen-Huene, Rector, FH Mannheim, University of Applied Sciences Mannheim; Prof. Dr-Ing Klaus-Jürgen Peschges, Director, METEOR Centre for Improvement of Key Competencies; Prof. Dr-Ing Herbert M. Schaedel and Prof. Dr-Ing Georg Hartung, both of FH Köln, University of Applied Sciences Köln.

The Conference social programme was very well structured, allowing participants to enjoy the best of the old city of Mannheim and its surroundings.

The UICEE staff, associates and students wish FH Mannheim another one hundred years of successful operation and prosperity.

## Conference in Sofia

It is our pleasure to report on the recent successful *1st Balkan Region Conference on Engineering Education*, held in Sofia, Bulgaria, between 20 and 23 September 1998. The Conference was jointly organised by the Bulgarian Ministry of Education and Science, through the National Science Fund, the Technical University of Sofia, and the UICEE.

With an unstable political, social and economic climate, the Balkan Region is one of the most troubled parts of Europe and is in urgent need of assistance. The Conference, during which over 30 papers were presented, demonstrated however that academics in the region are willing to cross borders and assist each other in their effort to provide quality education. The outcome of the meeting has been a de-

sire to continue this regional debate.

The Centre wishes to congratulate Mrs Albena Vutsova, General Secretary, National Science Fund of Bulgaria, and Prof. Kamen Vesselinov, Dean, Technical University of Sofia, for their leadership in staging this Conference.

## Bulgarian Partnership

The Director, at the kind invitation of Prof. Dimitar Dimitrov, Rector of the Technical University of Sofia, addressed the staff, students and guests of the University at the Opening Ceremony of its new academic year (1998-99).

Following the ceremony, the Rector of the University and the Director of the UICEE signed a *Memorandum of Understanding*, a partnership, between the two institutions. The ultimate objective of this partnership will be to establish a *Balkan Region Centre for Engineering Education* (BRCEE) as a sub-centre of the UICEE. Both parties look for the support and active participation of the Bulgarian Ministry of Education and Science. It is envisaged that the new Centre will play a significant role in raising the profile of engineering education in the Balkan Region and will undertake projects for the direct benefit of the region.

## Riga Seminar

Against the backdrop of the beautiful Hanseatic city of Riga, Latvia, the *2nd Baltic Region Seminar on Engineering Education* took place between 26 and 28 September at the Riga Technical University. The Seminar was staged by the UICEE in collaboration with the Riga Technical University.

Over 40 paper presentations were made during the Seminar, which was attended by more than 50 senior academics, including most of the Rectors of the Technical Universities in the Baltic States, and some from Sweden. In order to strengthen the collaboration between technical universities in the region, a consortium of technical universities, the University Consortium in Science and Technology (BALTECH), was established last year between the technical universities in the Baltic States and some technical universities in Sweden. A meeting of the consortium steering committee was held in conjunction with the Seminar.

Four distinguished Latvian academics were awarded the UICEE Silver Badge of Honour on this occasion. They were: Prof. Egons Lavendelis, Rector, and Prof. Ivars Knēts, Pro-Rector, both of Riga Technical University, Riga; Prof. Voldemars Strīkis, Rector, Latvia University of Agriculture, Jelgava; and Prof. Juris Pommers, Latvian University of Agriculture.

It has been decided that the *3rd Baltic Region Seminar*

on *Engineering Education* will be held in early September, 1999, with the venue yet to be determined.

## Caledonian Centre

The UICEE's first sub-centre, the *Caledonian Centre for Engineering Education* (CCEE), will hold its inaugural conference between 22 and 25 May 1999, at Glasgow Caledonian University, Glasgow, Scotland. The *1st CCEE Conference on Life Long Learning for Engineers* will be staged under the theme *Work Based Learning and Continuous Professional Development*.

The rapid advance of knowledge and the development of new engineering techniques places strong demands on engineers to maintain their professional standards. In many cases it is not possible for industry to release engineers for periods of study to update their skills. The challenge for engineering educators is therefore to develop modes of study that can be provided in the work place or through the Internet to address the needs of this large community of students. The conference theme, *Work Based Learning and Continuous Professional Development*, was chosen to address these challenges.

The CCEE has also recently been awarded two grants for projects related to the improvement of engineering education.

## GJEE

Two issues of the *Global Journal of Engineering Education* (GJEE), Volume 2, Numbers 2 and 3, will be in circulation in November.

Volume 2, Number 2 is a Special Edition of the journal and collates papers presented at the *90th Anniversary Jubilee Seminar on Engineering Education*, held at the Hochschule Wismar, the University of Wismar, Federal Republic of Germany, between 6 and 8 May 1998. A great strength of this Special Edition is the presentation of German perspectives on issues and achievements in engineering education, a breadth of views that would not otherwise be readily available to the global engineering community.

Volume 2, Number 3, is a regular issue of the journal, which includes awarded papers presented at the *1st UICEE Annual Conference on Engineering Education*, held at Monash University, Melbourne, Australia, between 11 and 14 February 1998.

A Special Edition of the GJEE, entirely dedicated to the publication of papers by members of the UNESCO International Committee on Engineering Education (ICEE), will be printed as Volume 3, Number 1, in January 1999. The papers present the personal views, based on considerable experience, of some members of the Committee (and one guest) on issues of quality in engineering education.