



# UNESCO International Centre for Engineering Education



## Newsletter

Volume 6, Issue 2

July 1999

### From the Director

We are living in peculiar times, times that are characterised by the commodification of virtually everything. Academia is far from immune from this, as is evident in the ease with which a university degree can now be purchased. In the same destructive vein, universities are bestowing honorary doctorates, at times for less than honourable reasons. This is clearly evident in the awarding of such honours to ministers in various governments for the benefit of business and a guaranteed flow of fee-paying students to their courses. While this ensures revenue for the universities, at the same time it cannot but devalue the product on offer. Even the professorial title has become a cheap commodity and we now observe the appointment of political relics as professors as a reward for their often dubious careers. High academic merit is rapidly losing any significance as such appointees frequently have little, or no, academic achievement in stark contrast to those who must earn an academic title.

The recent UNESCO initiative to organise the *UNESCO World Conference on Higher Education* in Paris in October last year was an exceptional and fruitful event. The outcomes of the Conference, which endeavoured to set the standards for the profession, are of particular relevance to the current status of academia and governments. The most relevant documents produced in conjunction with the Conference, and recently released by UNESCO, are: *World declaration on higher education for the twenty-first century*; *Framework for priority action for change and development in higher education*; and *Draft recommendations concerning the status of higher-education teaching personnel*. I would certainly encourage those in university management to familiarise themselves with these useful documents.

On the topic of UNESCO, it is worth mentioning the impending retirement of the Director-General, Dr Federico

Mayor, at the end of the year. The race for this position has already begun and almost every day we learn of new candidates for the post. Hordes of politicians, like vultures, are already circling and seeking to be the first to land. Judging by the qualities of some candidates, the last thing on their mind is being qualified and capable of doing the job. I look with anxiety to the next UNESCO General Conference at which representatives of the 185 or so member states meet in Paris this October to choose the preferred candidate.

The position of the Director-General of UNESCO has always been one of the most important, demanding and sensitive posts within the United Nations as it requires sensitivity to the critical areas of culture, education and science. The incumbent must demonstrate a wide range of qualities, skills and attributes. In my opinion, UNESCO needs an exceptional intellectual to lead the organisation into the next millennium, not a retired politician who would behave like a bull in a china shop. Good luck UNESCO, and let us hope that the wise men

and women from the country states will be enlightened in their choice.

### UDEP Launch

The Urban Design and Education Programme (UDEP), a joint initiative of the UICEE and the Victorian State Government, had its official launch at Monash University on 1 June 1999. Over sixty stakeholders from State and Local Government, industry and academia attended.

Professor Peter LeP. Darvall, Monash University



Recipients of the UICEE Silver Badge of Honour, Professor Branka Vucetic (l) and A/Professor David Wong.

#### UICEE Partners



Deputy Vice-Chancellor (Research and Development), and Chairman of the UICEE Academic Advisory Committee, opened the proceedings with an overview of the UICEE and its interest in the project, which can be seen as an extension of its involvement in sustainable development and environmental engineering education. The Honourable Robert Maclellan spoke on behalf of the State Government and expressed the expectation that the project would be a valuable contribution to the achievement of sustainable urban development in the State and beyond.

The Programme Director, Mr Andrew Olszewski, undertook the main task of introducing the project, describing its objectives and detailing its immediate and long-term agenda. UDEP's objective is to serve the international urban design profession by undertaking research, providing expertise in, and improving the quality of urban design education and practice, thereby promoting a sustainable approach to urban design. The programme will be realised through a number of activities, including research, the running of courses, staging of public and professional forums and the production of publications.

## 1<sup>st</sup> CCEE Conference

The 1<sup>st</sup> CCEE Conference on Life-Long Learning for Engineers, organised by the UICEE's satellite centre, the Caledonian Centre for Engineering Education (CCEE), was held at the Glasgow Caledonian University (GCU) between 22 and 25 May 1999. The Conference was opened by Dr Ian Johnston, Principal and Vice-Chancellor of GCU, and the UICEE Director and focused on the themes of work-based learning and continuous professional development. These are areas of increasing importance in university teaching with the growing realisation of the importance of life-long learning in an era characterised by the rapid advance of knowledge and technology.

The presence of academics from twelve countries worldwide was clear indication of the global relevance of life-long learning. Approximately thirty paper presentations were made during the Conference, an ideal number for the creation of an excellent forum for discussion and interaction between participants. Selected papers from the Conference will be published in Volume 3, Number 3 of the UICEE's *Global Journal of Engineering Education* (GJEE), due for release later this year.

It is envisaged that a follow-up conference will be organised at the Caledonian College of Engineering in Oman in 2001.

## Asia-Pacific Forum

A successful *Asia-Pacific Forum on Engineering and Technology Education*, the 2nd in the series, was organised by the UICEE and hosted by the School of Electrical and Information Engineering at the University of Sydney, Sydney, Australia, from 4-7 July 1999.

Close to 80 participants from over 20 countries attended and presented papers, 78 of which are included in the Forum Proceedings.

The Forum series is an on-going activity of the Asia-Pacific Higher Education Network-Engineering Education (APHEN-EE) and has the objective of stimulating research and development activity in engineering education in the region. One of the major outcomes of the Forum was the commitment of participants to further strengthen the

linkages in higher engineering and technology education through more collaborative projects throughout the Asia-Pacific region.

## UICEE Paper Awards

Five papers were awarded the UICEE Best Paper Award during the Closing Ceremony of the 2nd *Asia-Pacific Forum on Engineering and Technology Education*. Papers must be presented during the meeting and included in the proceedings in order to be eligible for selection by registered participants who vote for those that are felt to make the most significant contribution to engineering education.

The five papers were:

- |         |  |
|---------|--|
| Diamond | <i>Mirroring industry through international student projects</i> , by R. Homkes† and J.F. Vega Riveros‡, Purdue University, Kokomo, Indiana, United States of America†, Javerina University, Santafe de Bogota, DC, Colombia‡. |
| Diamond | <i>Teaching and learning in the 21st Century</i> , by A. Carbone, Monash University, Melbourne, Australia.   |
| Gold    | <i>Words fail us: the pragmatic need for rhetoric in engineering communication</i> , by A.L. Ahearn, Imperial College of Science, Technology & Medicine, London, England, United Kingdom.                                      |
| Silver  | <i>Computational visualistics: bridging the two cultures in a multimedia degree programme</i> , by J.R.J. Schirra, Otto-von-Guericke University  |



The UICEE Director (l) presenting Dr George Burns with the Silver Badge of Honour Certificate.

of Magdeburg, Magdeburg, Federal Republic of Germany.

Silver *Hypermedia navigation of pilot-scale process plants as a teaching tool*, by V.G. Gomes, B. Choy, G.W. Barton and J.A. Romagnoli, University of Sydney, Sydney, Australia.

The UICEE congratulates the authors of these excellent papers. It is envisaged that revised and expanded versions of these papers will appear in Volume 4, Number 1 of the *Global Journal of Engineering Education*.

## Badge of Honour Awards

During the 1<sup>st</sup> CCEE Conference on Life-Long Learning for Engineers, the Director had the opportunity to award the UICEE's Silver Badge of Honour 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 award was presented at the Opening Ceremony of the Conference to Dr George Burns, Coordinator of the Caledonian Centre for Engineering Education (CCEE), the UICEE's first satellite centre.

Two Silver Badges of Honour were awarded during the Forum Dinner of the 2<sup>nd</sup> Asia-Pacific Forum on Engineering and Technology Education, which took place on Sydney's beautiful Harbour aboard the *M.V. Vagabond Majestic*. The recipients were Professor Branka Vucetic and A/Professor David Wong, both of the School of Electrical and Information Engineering at the University of Sydney, and both with long careers in electrical engineering and significant achievements in promoting engineering education research and development.

Staff, students and associates of the Centre wish to congratulate the awardees. The picture on page 1 shows Professor Branka Vucetic and A/Professor David Wong, and that on page 2 shows the UICEE Director presenting Dr George Burns with the award.

## Membership

It has been several issues since we reported on the growth of membership of the Centre, and in that time membership has continued to climb steadily. We are

delighted to announce three new members in the Supporter category, Indiana University-Purdue University Indianapolis (IUPUI), Indianapolis, Indiana, USA; National Cheng Kung University, Tainan, Taiwan; and Fachhochschule Köln, Köln, Germany. This takes the total of Supporter institutions to ten. We have six new members in the Contributing member category: Kasetsart University, Faculty of Engineering, Bangkok, Thailand; King Mongkut's University of Technology Thonburi, Bangkok, Thailand; Silesian Technical University, Gliwice, Poland; Thammasat University, Rural Technology Department, Prathutani, Thailand; University of Craiova, Craiova, Romania; and University Politehnica of Bucharest, Bucharest, Romania. This takes the total of Contributing Members to seventeen. Individual membership has now reached 146, more than double the last recorded number a year ago.

## MoU

A Memorandum of Understanding (MoU) has just been signed between the UICEE Director and Professor M.A. Mariasingam on the establishment of a private institute of technology, the International Institute of Technology (ININTECH), in Bangalore, India. Prof. Mariasingam is the Institute's Director-designate and founder.

As well as supporting the development of educational infrastructure in India, the UICEE's interest in this initiative is fuelled by the

growth of commercial and private universities around the world, a phenomenon that requires investigation. Thus the Centre sees its involvement in this project as both supportive and in terms of a case-study, investigating the effectiveness of such new models of higher education and how best they can serve the international community.

It is envisaged that the Institute will commence its operation later this year, initially offering associate degrees through education in the first two years of an undergraduate programme. The focus, at least in the Institute's early days, will be on electronics and computer engineering, areas that are so vital for the further development of Indian industry. Students will have the opportunity to continue their studies to achieve the degrees of Bachelor of Science or Bachelor of Engineering at universities outside of India.

The picture above shows the UICEE Director (l) and Professor Mariasingam signing the MoU, witnessed by Professor Colin Chisholm (r).



## UNESCO Meeting

A meeting of the UNESCO International Committee for Engineering Education was held at Balatonfüred, Hungary, in conjunction with an international conference on *The Impact of Globalisation in Engineering Education and Practice*, which was organised by the World Federation of Engineering Organisations (WFEO), between 22 and 25 June 1999.

High on the agenda of issues in engineering and technology education considered by the Committee was that of engineering academic teacher training. It was decided that a workshop on this topic will be held in conjunction with the 3rd UICEE Annual Conference on Engineering Education, to be held in Hobart, Tasmania, in February 2000. Any person interested in becoming involved in this project and in attending the workshop should contact the UICEE Director.



The UICEE Director (l), Dr Eleanor Baum and Mr A.I. Vroeijsstijn (r) standing outside of the Faculty of Engineering, University of Porto.

search programme. A new development is the possibility of undertaking a Doctorate in Professional Practice through the same work-based PLC.

Professor Colin Chisholm, Dean of the Faculty of Science and Technology, has championed the programme at GCU, a programme that allows for the joint supervision of research and development projects between the UICEE and GCU. Mr Erich Reindel of the Fachhochschule Mannheim will be the first to enrol in this programme, and his thesis will be supervised by Professor Chisholm, Professor Klaus-Jürgen Peschges and the UICEE Director.

A critical issue will definitely be the high tuition fees in the UK, which at this stage are preventing potential candidates from non-European Union countries taking advantage of this excellent opportunity. However, if this initiative finds a good response from developing countries, both organisations will look for potential sponsors to lessen the financial burden for candi-

dates from these countries.

## Seminar in Porto

The UICEE Director spent a week in Portugal in June at the invitation of the University of Porto's Faculty of Engineering. In order to improve engineering education in the Faculty, an on-going series of seminars for academic staff has been established and involves presentations by international academics.

The Director was joined by two other academics: Dr Eleanor Baum, Dean of the School of Engineering, The Cooper Union for the Advancement of Science and Art, New York, USA, President of ABET, President of the Washington Accord and Former President of the American Society for Engineering Education, and Mr A.I. Vroeijsstijn of the Association of Universities in the Netherlands.

## Joint Supervision

The relationship at the heart of the UICEE-CCEE Axis is rapidly strengthening through several areas of academic endeavour. One of the immediate opportunities for collaboration is the joint supervision of postgraduate students. Glasgow Caledonian University (GCU) has instituted several modes of postgraduate education that can be undertaken on an external basis. Such programmes include the Postgraduate Learning Contract (PLC) framework, through which working students can achieve a Master of Science degree through a work-based learning/re-

## New Appointment

The UICEE is pleased to announce the appointment of Professor Colin Chisholm as the first external examiner of the UK's Professional Doctorate related to work-based learning. This appointment is recognition of Professor Chisholm's active involvement in the development of work-based learning programmes and, in particular, his extension of the Postgraduate Learning Contract Framework to include a Doctorate in Professional Practice.

As readers will note from this issue of the Newsletter, Professor Chisholm is involved with a number of projects relating to the development of effective work-based learning programmes.

## Polish Project

Piotr and Bartłomiej Kalandyk, visiting occupational trainees based in the UICEE since September 1998, have recently completed a project titled *A proposed management approach for the Faculty of Management and Economics, Technical University of Gdansk*.

The authors, who are students of the Faculty, examine its current operation and propose the adoption of quality management principles espoused by Total Quality Management (TQM) and ISO 9000. The report will be presented to the Faculty on their return to Poland.