



# Newsletter

**UNESCO Supported  
International Centre  
for  
Engineering Education**

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Monash University

## From the Director

In the first half of January I went to Paris to attend a meeting of the UNESCO Steering Committee on Technical Human Resources Development, the body which recommended the establishment of the UNESCO Supported International Centre for Engineering Education (USICEE) in 1993.

Despite the snowy conditions and freezing temperatures in Europe, I was pleasantly and warmly received at UNESCO Headquarters in Paris. The Centre's activities are well known to, and supported by, Dr Adnan Badran, Deputy Director-General, as well as his UNESCO staff. So much so that when the Committee was introduced to Dr Federico Mayor, Director-General of UNESCO, for a half-hour meeting, it took Dr Badran quite a while to brief the Director-General on USICEE's activities and achievements.

The highlight of the visit to the Director-General was the official launch of the USICEE's most recent book, entitled *The Application of Computer-Assisted Training Programs in Engineering Education*. The original development of the course as well as the publication of the book were sponsored by UNESCO. Such was the impact of this publication on UNESCO that we have received a grant to repeat the course in 1996 and in 1997.

Several activities undertaken by the USICEE were discussed by the UNESCO Steering Committee, and received wide-ranging support. The Committee reiterated its commitment to the USICEE and its support for USICEE's effort to become a fully fledged UNESCO centre.

The Centre is now well into the third year of operation with a well defined research program which will involve postgraduate students and overseas visitors. The objective of this program is to further the advancement of human resources in engineering education, and in particular to assist developing countries in their effort to develop expertise in engineering and technology education.

Future plans include the expansion of the Centre's

national and international role and activities. An extensive program of conferences, seminars and workshops has been put in place to facilitate the transfer of information on engineering education. An important achievement for the Centre was that it was appointed by the International Liaison Group for Engineering Education (ILG-EE) as the organiser of *the 1998 Global Congress on Engineering Education* in Cracow, Poland, which will incorporate three key international meetings.

## Czechs Visit USICEE

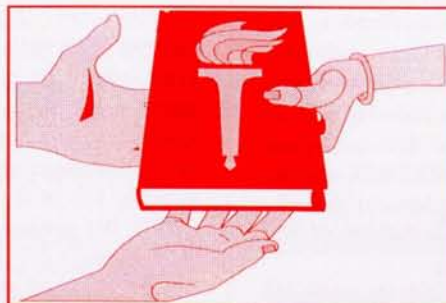
A delegation of the Engineering Academy of the Czech Republic, under the leadership of Prof. Petr Zuna, President of the Academy and Dean of the Faculty of Mechanical Engineering at the Czech Technical University in Prague visited Australia in February. The delegation came to Australia at the invitation of the Australian Academy of Technological Sciences and Engineering and visited several academic organisations including the Faculty of Engineering at Monash University.

They were particularly interested to learn about the activities of the USICEE, where they spent some time on 1 February. The Director briefed

them on the USICEE activities in Central and Eastern Europe. Discussions included the strengthening of collaboration in technology and engineering education between the two parties. The visitors expressed their appreciation of the USICEE program on transfer of information to universities in the Czech Republic.

## APHEN-EE

With the establishment of the Asia-Pacific Higher Education Network (APHEN-EE) by the USICEE, it is essential to create a forum for engineering educators to discuss issues of innovation in engineering and technology education not only by electronic means, but also in person. Therefore, the *First Asia-Pacific Forum on Engineering and Technology Education* will be organised by the USICEE between 6 and 9 July 1997 at Monash University, under the



Honorary Chairmanship of Professor Michael L. Brisk, Dean of Engineering at this University.

The objective of this Forum is to bring together educators from the Asia-Pacific region to initiate dialogue about common problems in engineering and technology education; to discuss the need for innovation in engineering and technology education; and to foster the links, collaboration and friendships already established in the region. This Forum is one of many regional meetings to be organised in 1997 in preparation for the *Global Congress on Engineering Education* planned for 1998. A copy of the call for papers is available on request.

We are also building an electronic database for APHEN-EE. This already has over 100 entries and we would encourage readers of this newsletter to look at the USICEE electronic mailing lists and to join the APHEN-EE database.

## AAEE News

Last December the Association held its *7th Annual Convention and Conference* at the University of Melbourne, under the theme *Internationalisation of Engineering Education*. Close to 140 academics, government and industry representatives and postgraduate students attended the Conference. Over 110 presentations were made and 100 papers were included in the Conference Proceedings, published by the Centre. Copies of the Proceedings can be purchased from the USICEE.

On the occasion of the Melbourne conference, the AAEE Medal for distinguished contributions to engineering education was awarded to Professor Trevor W. Cole, Head of the Department of Electrical Engineering at The University of Sydney. Prof. Cole was the Inaugural President of the AAEE between 1989 and 1991, during which time he helped formulate and implement the objectives of the AAEE. He is also a member of the USICEE's Academic Advisory Committee.

In 1995, the *Australasian Journal of Engineering Education* again published two issues with 220 pages of material. The second issue, now in circulation, was a special issue, consisting of keynote addresses and special presentations made at the *6th AAEE Annual Convention and Conference* which was held at the University of Technology, Sydney (UTS). The issue was edited by a team of UTS academics under the leadership of Prof. Peter Parr, Dean of Engineering at UTS.

As mentioned in the last newsletter, the two 1995 issues of AJEE are available on the WWW at:

<http://elecpress.lib.monash.edu.au/ajee/>

The *8th AAEE Annual Convention and Conference* will be held at the University of New South Wales between 15 and 18 December 1996, with Prof. Mark Wainwright as Conference Chairman. Our readers are invited to propose a paper and attend the Conference. Interested persons should contact the USICEE to receive

a copy of the announcement.

## Retiring President

Professor Peter Darvall, Deputy Vice-Chancellor of Monash University, stood down as President of the AAEE at a meeting of the Executive Committee held immediately after the 7th Annual Convention. He will remain on the Executive Committee as a member and the Immediate Past President. He was elected AAEE President at the 3rd Annual Convention, held at the University of Adelaide in December 1991, serving for a period of four years, the longest Presidency so far.

Prof. Darvall took up the Presidency at a time when the Australian higher education system was going through a major change. During this period Australian academia experienced substantial cuts to its per-student budget, and has had to accept increasing controls by Canberra bureaucrats for a ridiculously small increase in academic salaries. The rationalisation process in higher education caused tremendous tensions and difficulties and the morale of academic staff was sorely challenged at this time.

As an academic, as well as a senior academic manager, Prof. Darvall always endeavoured to minimize the negative effects of this so-called reform of Australian higher education. He has been a guardian of academic freedom and the collegiate spirit. He has promoted academic progress, visionary approaches to education, excellence in research and teaching, efficiency and good management. Only a dozen or so engineering educators, such as Prof. Darvall, have had the courage to express their criticism of the bureaucratic approach to higher education and the mistakes made, and have vigorously challenged those directly responsible. He has been a team builder and a progressive voice, and has injected these qualities into the life of the AAEE.

At the recent 4th World Conference on Engineering Education, held at St Paul, Minnesota, in recognition of his exceptional qualities, as well as his outstanding contributions to engineering education, Prof. Darvall was elected Chairman of the International Liaison Group for Engineering Education (ILG-EE).

## New President

It is our pleasure to report to our readers that Prof. Mark Wainwright, Dean of the Faculty of Engineering at the University of New South Wales (UNSW), Sydney, Australia was recently elected President of the Australasian Association for Engineering Education (AAEE). The election took place at the *7th AAEE Annual Convention and Conference* which was organised by the USICEE in collaboration with the University of Melbourne last December.

Prof. Wainwright holds a Personal Chair in Chemical Engineering (since 1989) and has been Dean of the

Faculty of Engineering at UNSW since 1991. His research interests have centred on four main areas: applied catalysis and reaction engineering, mineral processing, adsorption processes in pollution abatement, and gas and liquid chromatography. His major current research interest is in the development of novel catalytic processes for the production of synthetic fuels and chemicals.

Prof. Wainwright is a Fellow of The Institution of Engineers, Australia, a Fellow of the Australian Academy of Technological Sciences and Engineering and a Fellow of the Royal Australian Chemical Institute (RACI). In 1987 he was a joint recipient of the RACI Applied Research Award - Erich Heymann Medal for research into copper catalysts and catalytic processes based on copper, and in 1989 he was awarded the RACI R.K. Murphy Medal for applied research in reaction engineering and minerals processing. In April 1996 he is to receive the Murray Raney Award of the Organic Reactions Catalysis Society in Atlanta, USA.

Prof. Wainwright is a member of the USICEE Academic Advisory Committee.

Staff and associates of the Centre wish Prof. Wainwright success in his AAEE Presidency.

## Annual Report

The 1995 Annual Report describes the second year of operation of the USICEE which has contributed significantly to the advancement of engineering education at national and international levels. As the Chairman of the USICEE Academic Advisory Committee and Deputy Vice-Chancellor of Monash University, Professor Peter Darvall rightly pointed out 'a year when the USICEE began to realise its potential for influencing developments in engineering education in several countries'. A copy of the report is available on request.

## East-West Congress

The 3rd East-West Congress on Engineering Education, to be held at the Gdynia Maritime Academy between 15 and 20 September 1996, is being organised by the USICEE under the theme *Re-vitalising Academia/Industry Links*.

The response from the international community of engineers and educators has been excellent with the submission of over 160 paper proposals and close to 300 expressions of interest in attending the Congress received from a total of 35 countries worldwide.

The proposed papers cover a wide range of topics of interest to the engineering education community, with Australians being the largest national group.

Although the deadline for submitting abstracts has passed, especially interesting paper proposals will still be considered as they come in. However, the deadline for receipt of final manuscripts remains unchanged (29 March 1996). Authors intending to submit late paper proposals should forward them to USICEE as soon as

possible.

Immediately after the 3rd East-West Congress, an *International Conference on Quality Assurance in Higher Education* will be held at the University of Mining and Metallurgy (UMM) in Cracow, Poland (22-24 September). This is an opportunity for international visitors to extend their stay in Poland and visit Cracow, the pearl of medieval Poland. For more details please contact Dr Janusz Szpytko at the UMM by email: [szpytko@uci.agh.edu.pl](mailto:szpytko@uci.agh.edu.pl).

## International

With the appointment of the USICEE Director as Honorary Dean of the *English Engineering Faculty* at the Donetsk State Technical University (DSTU) in the Ukraine, talks have been carried out with the Australian Federation of Ukrainian Organisations to establish an *Ukrainian Education Foundation*. The objective of this Foundation will be to generate support for the engineering studies in English in the Ukraine.

An *Australian-Ukrainian Library on Engineering Education* has been founded in the English Engineering Faculty at the DSTU. A set of publications, including books, conference proceedings, journals, all to the value of \$1260, was sent from the USICEE in 1995, as a gift to this collection. Another shipment of material will be despatched soon.

The USICEE Director is organising a four-day workshop to discuss a Faculty teaching program and to establish a Faculty International Academic Advisory Committee. The workshop will be held at the DSTU between 31 May and 3 June 1996, immediately after the celebrations of the 75th anniversary of the DSTU (28-30 May). Anyone interested in contributing to this project should contact the USICEE Director.

## Monash Engineering Education Series

The establishment of the *Monash Engineering Education Series* in 1995 began a new era in the activities of the USICEE. It added a new dimension to Australian engineering education by creating a source of information on research and development activities in engineering and technology education.

Moreover, this book series has opened up tremendous opportunities for engineering educators to share their achievements with local and international colleagues. The series is open to all academics involved in engineering education research.

The idea for establishing the series comes from the Centre's mission to stimulate research and development activities in engineering education and to facilitate the transfer of information, expertise and research results in the field.

The first two volumes in the series were published in

1995. These were: *Computers in Electrical Engineering Education - Research, Development and Application*; *1995 International Congress of Engineering Deans and Industry Leaders*. The third volume, entitled *The Application of Computer-Assisted Training Programs in Engineering Education*, evolved from a UNESCO sponsored training course organised by USICEE in November 1994, and has just been released.

## 1998 Global Congress

The Centre was successful in its bid to organise the 5th World Conference on Engineering Education to be held in Cracow, Poland, in September 1998. This Conference will be part of a *Global Congress on Engineering Education* organised and coordinated by Australians in Central Europe. The Global Congress will also incorporate the *4th East-West Congress on Engineering Education* and the *UNESCO 1998 International Congress of Engineering Deans and Industry Leaders*.

A number of regional conferences on engineering education will be held in 1997 as a forerunner to the Global Congress. The objective of this series is to raise the profile of engineering education in such regions as Africa, Central and South America, the Arab world, Asia-Pacific, and the countries of the former Soviet Union, and to prepare the stage for the Global Congress.

## Central Europe Project

Last year the Centre was successful in its applications for two grants under the Australian Program of Training for Eurasia (APTEA) scheme. The aim of the scheme being to share Australian expertise in engineering education with countries developing this area. The first project, arranged via the Australian Embassy in Warsaw, involved the Czech Republic, Poland and Slovakia. In June and September last year the 30 main academic libraries in these countries were each sent printed materials published by the USICEE to the value of \$500, and 400 individual academics in those countries received information about the 3rd East-West Congress.

The second project involved eight other Central European countries, Albania, Bulgaria, Estonia, Hungary, Latvia, Lithuania, Macedonia and Romania, and liaison between the USICEE and DFAT. The Centre has been engaged in compiling a database of engineering education institutions in these countries and in December, 300 academics received the AAEE Newsletter, information about the 3rd East-West Congress and the Report of the 1995 International Congress of Engineering Deans and Industry Leaders. In addition, 40 main academic libraries each received books and journals to the value of \$650.

It is hoped that these two projects will be continued to enable the network to be extended, further publications sent, and new initiatives pursued.

## E-Mailing Lists

The Centre runs several electronic mailing lists for the benefit of the engineering educational community:

USICEE	The Centre's Newsletter (this one)
AAEE	The Australasian Association for Engineering Education
APHEN-EE	Asia-Pacific Higher Education Network - Engineering Education
CBLG	Computer Based Learning Group
PBL-LIST	Problem Based Learning
HYDROLOGY	Australian hydrology
MATHCAD	Use of the Mathcad program

You may subscribe to any of these by sending a one line e-mail message of: 'subscribe *listname*' to MAJORDOMO@eng.monash.edu.au, where *listname* is one of the list names from above. Thereafter, send messages to other people on the list by sending to *listname*@eng.monash.edu.au, eg USICEE@eng.monash.edu.au.

Should you wish to unsubscribe yourself at a later date, just send a one line message of: 'unsubscribe *listname*' to the MAJORDOMO address above. Contact the Centre for more information on these lists or any other relevant activities.

## Emphasis on Africa

UNESCO is endeavouring to place more emphasis on the development of human resources in science, technology and engineering in Africa. According to the Final Report of the *Symposium on Science and Technology in Africa*, which was held in Nairobi, Kenya in 1994, efforts should be made to create national and international institutions enabling the development of science, technology and engineering infrastructure.

USICEE intends to respond to this call by establishing contacts with several academic institutions in Africa. In particular, we are planning to set up an *Australian-Nigerian Library on Engineering Education* at the Lagos State University, by donating books, conference proceedings, journals and other material, in a similar manner to that established at the Donetsk State Technical University in Ukraine. The USICEE Director is also involved in setting up an *Association for Engineering Education in Africa (AEEA)* which will be instrumental in developing engineering education on this continent.

The Director would welcome input from anyone with a special interest in this area.