



# Newsletter

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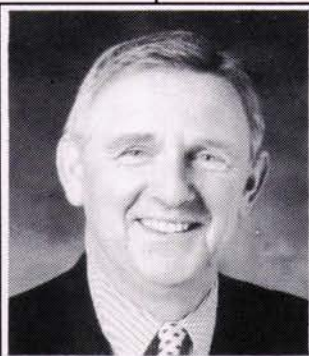
March 1997

Monash University

## From the Director

Welcome to the USICEE's first Newsletter for 1997. Looking back, the last year strikes me as a linchpin in the USICEE's development. It was a year of consolidation and of innovation, with many projects and activities for the future finding impetus. It was also a year of celebration, being the 50th anniversary of the founding of UNESCO. We felt that the most appropriate way to celebrate this important international milestone in the promotion of global peace and wellbeing through knowledge and understanding was to increase the Centre's activities, as well as to expand its field of operation by involving new international partners and collaborators.

In the same vein, 1997 sees us opening up membership of the USICEE to individuals and organisations, with the objective of increasing the involvement of members in our many diverse activities. As well as the opportunity to participate in the USICEE's activities, members receive our new *Global Journal of Engineering Education* (GJEE) and other publications, as well as other benefits. The USICEE's background, its activities and the benefits of membership are detailed in our brochure, which is available on request. I urge you to join us in our work for engineering education worldwide and take up membership with the Centre.



Prof. David Robinson

## New Vice-Chancellor

The USICEE is delighted to introduce Monash University's new Vice-Chancellor, Professor David Robinson. In assuming the mantle of Vice-Chancellor, Professor Robinson enthusiastically acknowledged Monash University's established position as Australia's international university *with a reputation for excellence and innovation that is the envy of the higher education system*. To this praise he added the cautious observation that, within an increasingly competitive environment, *maintaining the status quo is not an option for the future*; for Monash University to retain its international standing, he continued, the university's *distinction and distinctiveness... must not merely be maintained*, it must be enhanced.

Professor Robinson's academic career commenced with a BA (Politics and Sociology) from University College, Swan-

sea, in 1964, followed three years later with the award of a PhD in Sociology at the University of Wales.

His research has focused on medical sociology and health policy, and he has written or edited fourteen books on subjects relating to health, addictions, and care for people with HIV-AIDS.

Before joining Monash University, Professor Robinson stood at the helm of the University of South Australia for five years. He oversaw the amalgamation of the South Australia Institute of Technology with three campuses of the South Australia College of Advanced Education, developing the fledgling university into a highly successful tertiary institution.

His previous career appointments include an eleven year association with the University of Hull in the UK, where he progressed from Senior Lecturer to the institution's pro Vice-Chancellorship. Prior to this, he spent nine years researching at the Addiction Research Unit in the University of London's prestigious Institute of Psychiatry.

Professor Robinson has chaired several World Health Organisation expert committees, and held numerous positions as consultant and adviser to national health and research organisations.

Staff and associates of the Centre wish Professor Robinson success in his new position as Vice-Chancellor and look forward to benefiting from his vast experience in the international arena.

## New UNESCO Appointment

The USICEE is also delighted to announce the appointment, last year, of Professor Maurizio Iaccarino to Assistant Director-General for Science, UNESCO. Professor Iaccarino takes over from Dr Adnan Badran, who is now UNESCO's Deputy Director-General.

Professor Iaccarino received an MD degree from the University of Naples in 1962 and subsequently took up a position as post-doctoral fellow at Stanford University (1966-68). Before joining UNESCO, he held a number of academic and research positions; for many years, he was associated with the International Institute of Genetics and Biophysics, Naples, where he was a staff scientist and subsequently Director from April 1985 to December 1993. In 1986, he was appointed Professor of Microbiology.



His research interests include protein structure and characterisation; DNA methylation; genetics and molecular biology of amino acid transport and biosynthesis; regulation of nitrogen fixation; and the molecular biology of the Rhizobium-legume symbiosis.

Throughout his career, Professor Iaccarino has been actively involved in science management and research activities, with the direction of more than 20 research groups at the International Institute of Genetics and Biophysics alone. He is a member of the scientific council of several research institutes; member of the evaluation board of several international organisations (EU, EMBO, Human Frontier Science Program, British Council etc); he is Italian delegate to survey biotechnological activities in developing countries; and member of the EMBO Council and Board of Trustees of the Human Frontier Science Program. His activities include the organisation of several national and international congresses, workshops and practical courses.

Professor Iaccarino is the co-author of about 70 publications in international journals, and is winner of prizes of the Academy of Medical Sciences of the Consorzio Interuniversitario di Biotecnologia and of the Academy of Lincei.

We, at the USICEE, wish Professor Iaccarino all the best in his new position, and look forward to a close association with him.



Prof. Maurizio Iaccarino

## Global Journal

The USICEE has established its own internationally focused engineering education journal, appropriately titled the *Global Journal of Engineering Education* (affectionately known as GJEE). This is an exciting development for the USICEE in its role as a clearinghouse of innovation in engineering education. It is a further step in the Centre's quest to fulfil its commission of human resources development within engineering through engineering education, in this instance, by providing both a global forum for debate on, and research and development into, issues of importance to engineering education, and a vehicle for the global transfer of such discourse. In the tradition of its earlier incarnation, the *Australasian Journal of Engineering Education*, the GJEE will remain a vehicle and support for publication of Australasian research and development in engineering education, but, as its title cannot fail to impress, the new journal adopts a more intense global focus upon the subject.

It is fitting that the first two issues collate opening and welcome addresses, and expanded versions of keynote addresses and award winning papers presented at an international congress, the *3rd East-West Congress on Engineering Education*, under the theme *Re-vitalising Academia/Industry Links*.

The GJEE is available to members of the USICEE in hard-copy and, along with the Centre's Newsletter, information about the Centre's activities, and various publications, on the internet at: <http://www.eng.monash.edu.au/usicee> Multiple readerships (libraries etc) can subscribe to the journal for \$A120 per annum.

## Teaching's Top Gun

A *Campus Review* Special Report, dated 26 November 1996, has published the results of the *Independent Teaching Survey*. The survey cites Roger Hadgraft, of Monash University, as one of Australia's four most respected teachers in the field of civil engineering.

Among his many professional interests, Roger is Associate Director of the USICEE, where he has played a leading role in establishing electronic communications for the Centre's extensive membership networks. Roger was also Course Leader for the Centre's series of workshops on *The Application of Computer-Assisted Training Programs in Engineering Education*, which were given to tertiary teachers from the Asia-Pacific Region. He is the Founding Convener of the USICEE Problem-Based Learning (PBL) and Engineering Design Groups and has published widely in the use of PBL and hypertext in engineering education.

## 1996 Annual Report

The USICEE's 1996 Annual Report provides comprehensive information on the diverse and extensive activities carried out by the USICEE in the third year of its operation on both the national and international levels. Readers will find that 1996 was a year of consolidation and of innovation, in particular in the international arena with the extension of the USICEE's sphere of collaborative relationships. A copy of the report is available on request.

## Visitors Seminar Series

A USICEE Distinguished Visitor Seminar Series has been operational since 1994 with the aim of promoting the transfer of information from distinguished national and international academics to the Faculty of Engineering at Monash University and to other academics in the Melbourne metropolitan area. The series provides local academics with the opportunity to learn about other Australian and international developments in engineering education and to discuss issues of importance with visiting academics.

Several distinguished engineering academics gave lectures under this series in 1996, including Prof. M. Tuncay Birand, Dean, Faculty of Engineering, Middle East Technical University, Ankara, Turkey; Prof. Mark R. Liberzon, Vice-President, Moscow State Aviation Technology University, Moscow, Russia; and Assoc. Prof. Kevin Rochford, Science Education Unit, The University of Cape Town, Republic of South Africa.

Prof. Rochford visited the USICEE during his trip to Australia to receive the 1996 AAEE Medal (International) for Distinguished Contributions to Engineering Education.



The medal was awarded at the *8th AEEE Annual Convention and Conference*, held at the University of New South Wales between 15 and 18 December 1996.

## METU Dean visits USICEE

The highlight of visits made to the USICEE in 1996 was that by Prof. Tuncay Birand, Dean of Engineering at the Middle East Technical University (METU). Prof. Birand's visit to Australia and Monash University was at the invitation of the USICEE; Monash University and METU signed a collaborative agreement a few years ago, and the Faculty of Engineering at METU is a member of the USICEE network of collaborating institutions. Several issues of importance, as well as future joint activities, were discussed.

On conclusion of the visit to the USICEE, both Prof. Tuncay Birand and Prof. Michael L. Brisk, Dean of Engineering at Monash University, released a joint *communiqué*, concerning future collaboration. Collaboration with the USICEE, and joint ventures in engineering education were high on this agenda.

## 2nd APHEN Conference

A 2nd UNESCO-UNITWIN Asia-Pacific Higher Education Network (APHEN) Regional Conference was held at Macquarie University in Sydney between 28 and 29 November 1996. Over 50 delegates from as far as Turkey to the Pacific Islands attended this extremely successful meeting. It was organised jointly by The Australian Vice-Chancellor's Committee (AVCC) and the Graduate School of Management at Macquarie University.

UNESCO provided a grant to the AVCC to sponsor the participation of some of the delegates from developing countries. A substantial part of this grant was passed on to the USICEE, allowing the Centre to invite two distinguished promoters of engineering education, Prof. Tuncay Birand, Dean of Engineering at the Middle East Technical University, and Dr S. Hasan, Chairman of the Education Committee of the Institution of Engineers, Pakistan and former Rector of the Usman Institute of Technology in Karachi, Pakistan. Another representative of the USICEE Network was Prof. Mark Liberzon, Vice-Rector of the Moscow Aviation Technology University and Vice-President of the Russian Association for Engineering Education.

The USICEE Director presented an address titled *APHEN-EE: building bridges in the Asia-Pacific*. He reported on the achievements of the USICEE in developing and promoting the APHEN-EE sub-network in the period between the 1st and 2nd APHEN Regional Conferences (the 1st APHEN Conference was held at Macquarie University in August 1994). The presentation gave comprehensive evidence of the USICEE's commitment to raising the profile of engineering education in the Asia-Pacific Region.

Prof. Birand presented an address titled *A case study on international collaboration in engineering education: USICEE-METU partnership*, in which the collaborative na-

ture of the USICEE Network was outlined. The outcomes of the joint activities of the USICEE and a member of the USICEE Network were presented.

Dr Hasan's talk, titled *Importance of USICEE Network in engineering education*, presented his views on the nature and future collaborative activities under the leadership of the USICEE as determined by the needs of a partner institution, representing a developing country.

In his talk, titled *On the international collaboration for engineering education*, Prof. Liberzon concentrated on the role and the requirements of the APHEN-EE sub-network on engineering education. He emphasised the clearinghouse role of the USICEE and pointed out its accomplishments, achieved in a very short period of time.

The four addresses quite rightly presented the work of the USICEE as the leader of the APHEN Network. The Conference summary placed the USICEE run APHEN-EE sub-network at the forefront of the activities and achievements of the entire APHEN Network, a position we are proud to hold and maintain.

## Asia-Pacific Forum

The 1st Asia-Pacific Forum on Engineering and Technology Education will be staged 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. It is an activity of the APHEN Engineering Education sub-network (APHEN-EE).

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. So far, over 160 paper proposals have been received from over 40 countries worldwide. It is envisaged that the forum will generate an action oriented agenda for the APHEN-EE network to develop engineering education and to strengthen the collaboration and exchange of information between countries of the Asia Pacific region.

This Forum is one of many regional conferences on engineering and technology education to be organised in 1997 in preparation for the *Global Congress on Engineering Education* planned for 1998. This series of conferences will seek to build up linkages among international engineering educators; to address prevailing problems and issues falling within the compass of engineering and technology education; and, more broadly, to raise the profile of engineering and technology education in individual regions.

## UNESCO Grant to USICEE

UNESCO has provided the USICEE with a grant of \$US37,700 to organise another course based upon the published book, *The Application of Computer-Assisted Training Programs in Engineering Education*.



The course will be run in conjunction with the *1st Asia-Pacific Forum on Engineering and Technology Education* between 10 and 18 July 1997. Twelve young engineering academics from South-East Asia will be recruited for the course in collaboration with National Commissions for UNESCO in the selected countries.

## Global Congress in 1998

The next couple of years will witness some exciting developments in international engineering education. The USICEE is planning a *Global Congress on Engineering Education*, to be staged in Cracow, Poland, between 6 and 11 September 1998.

This Congress will incorporate three other major international gatherings: the *4th East-West Congress on Engineering Education*, the *5th World Conference on Engineering Education* and the *1998 International Congress of Engineering Deans and Industry Leaders*.

Their Excellencies M. Jonathan Thwaites, Australian Ambassador to Poland, the Czech Republic and Slovakia, and Christopher Hum CMG, the British Ambassador to Poland, have accepted our invitation to become patrons of the *Global Congress*.

The Director has invited several leading international organisations involved in engineering and technology education to become *Global Congress* co-sponsors. To date, UNESCO, FEANI, NSPE, ASEE, UATI and RAEE have accepted our invitation.

A call for papers and other Congress activities is in circulation in print form as well as on the Internet.

## The ILG-EE

A Trustees Meeting of the International Liaison Group for Engineering Education (ILG-EE) was held at the University of Portsmouth in the UK on Friday, 17 January 1997. The meeting was attended by the USICEE Director, who is the Foundation Secretary and a trustee of the ILG-EE.

Several issues concerning internationalisation of engineering education and the role of the ILG-EE as a coordinator of international activities were discussed.

It was resolved to support financially the registration fees of several participants wishing to attend the *1st Asia-Pacific Forum on Engineering and Technology Education*. A grant to the value of \$A1,500 was made available for this purpose.

## International Network

Another cooperative agreement was signed in December 1996 between the USICEE and Wuhan University of Technology, Wuhan, People's Republic of China, to establish collaboration on academic and research related activities. This brings the total number of such cooperative agreements to fifteen.

The objective of this activity is to build a worldwide network of education institutions interested in developing engineering education, with the scope of such collaboration covering a broad range of engineering education research and development activities.

## Russian Trust Fund

The USICEE Director was instrumental in setting up an Australian branch of the International Trustee Fund of the Tsyolkovsky Moscow State Aviation Technology University. Four Australian academics, including the Chairman of the USICEE Academic Advisory Committee, Prof. Peter Darvall, Prof. Trevor Cole of the University of Sydney, Prof. Mark Wainwright of the University of New South Wales, and the USICEE Director, have become trustees of the Fund.

The objective of the Fund is to foster international collaboration in aviation technologies. Special emphasis is placed on engineering education in this particular area of engineering. Apart from Russia, 15 countries worldwide have established national foundations, with the United States, Germany and Israel leading the group.

Prof. Mark Liberzon, Vice-President of the Moscow State Aviation Technology University and Vice-Chairman of the Trustee Board, visited Australia, and the USICEE, between 24 November and 2 December 1996, to finalise the registration of the Fund. During his visit, he also presented a USICEE seminar at Monash University and a paper at the *2nd APHEN Regional Conference* at Macquarie University.

## Women in Engineering

In December 1996, a scholarship was awarded to Ms Shi Tao under the *USICEE Women in Engineering Education Scheme* and through the Office of the Deputy Vice-Chancellor, Monash University.

The scheme offers scholarships for women in engineering education leading to the award of the degree of Master of Engineering Science by research. Exceptional research projects may be continued, leading to the award of the degree of Doctor of Philosophy. Particular emphasis is placed on research into human aspects of engineering, engineering pedagogy, training methodologies in engineering, educational technology, multimedia and computer-aided engineering education.

Ms Tao commenced her studies at the USICEE in February 1997.

## German Connection

Ms Tatiana Schneider, a student of Fachhochschule Mannheim, in the Federal Republic of Germany, spent the second semester of 1996 in the Centre as a USICEE research visitor. Her work focused upon industry's views on sustainable development and environmental engineering education, with an objective of



establishing what industry considers to be the educational requirement of an engineer operating in today's increasingly environmentally sensitive workplace. The core of her study in Australia was a survey and analysis of industry views on the issues of sustainable development and environmental engineering education, and, in conjunction with the staff of the USICEE, a comprehensive *Report of a practical term*. The practical term spent at the USICEE and the final report are integral parts of her studies in Germany.

## Initiatives for Africa

As part of the USICEE's strategy for the development of human resources in science, technology and engineering education in Africa, the Centre intends to coordinate the transfer of engineering education publications to as many African academic libraries as possible. Also, we have plans underway to establish a *Pan-African Forum on Engineering and Technology Education*, possibly to be held at the University of Cape Town, South Africa, in February 1998. This Conference will offer important input into the development of an Association for Engineering Education in Africa (AEEA).

We are confident that the USICEE's African initiatives will prove to be as successful as those undertaken over the last two years for universities in Central and Eastern Europe.

## Latin American Initiatives

Last January, the USICEE Director attended, and presented a keynote address at, the *3rd Mexican, Central American and Caribbean Congress of Deans of Engineering and Industry Leaders* at the invitation of Professor Jorge Guzman Arciniega of the University of Puebla, Mexico.

The Congress was attended by over 300 people, including more than 20 Engineering Deans from the region. The Director was pleased to witness the participation of a large group of undergraduate and postgraduate students, with individual countries sending from 10 to 15 students from various universities. It was reassuring to see that the next generation of engineers is concerned about engineering education.

The USICEE Director's opening address, titled *Internationalisation of engineering education*, presented an overview of international affairs concerning engineering education. It was so well received that he was invited to present another address at the closing ceremony. This second address focused upon *APHEN-EE: Asia-Pacific Network on Engineering Education*. There was much interest in our achievements in building an Asia-Pacific Higher Education Network on Engineering Education, and the Deans of Engineering expressed their wish to build a Latin American Higher Education Network under the leadership of the USICEE. It is such collaboration that the USICEE strives to achieve; to this end, the Centre is seeking to expand its collaborative relationships in the region, in particular, in the

pursuit of partnerships and joint research projects.

## European Seminars

Two European Seminars are to be staged by the USICEE in September 1997. The first is the *Mediterranean Seminar on Engineering Education*, to be held between 14 and 16 September at the University of Pavia, Italy. The second is the *Baltic Region Seminar on Engineering Education*, to be held between 26 and 29 September at the Vilnius Gediminas Technical University, Vilnius, Lithuania. The purpose of these two short seminars is to bring together educators from the region and to initiate a dialogue about common problems in engineering and technology education in preparation for the 1998 *Global Congress on Engineering Education*.

It is anticipated that the seminars will produce reports on the pressing needs of the region and how the international community, under the leadership of the USICEE, can assist the regions in their development of engineering and technology education. It is envisaged that both seminars will produce a volume of proceedings.

## Transfer of Information

In 1996, the USICEE was successful in extending the grant under the Australian Program of Training for Eurasia (APTEA) scheme to assist academic institutions in Poland, the Czech Republic and Slovakia. Apparently, it was the last grant awarded under the APTEA scheme.

In September, over 30 libraries within academic institutions in the Czech Republic, Slovakia and Poland were sent copies of the UNESCO sponsored book *The Application of Computer-Assisted Training Programs in Engineering Education*, and the Proceedings of the *3rd East-West Congress on Engineering Education*. The value of the shipment to each of these libraries was \$170. Another set of USICEE publications, to the value of \$A275, was sent to these libraries in February 1997.

This was another phase completed in the USICEE's APTEA HOM (Head of Mission) project, supported by the Australian Embassy in Warsaw, whereby expertise in engineering education is shared with countries developing engineering education.

We wish to express our sincere gratitude to the Australian Ambassador in Warsaw, His Excellency M. Jonathan Thwaites, for his support of the USICEE and its activities in Central and Eastern Europe. We hope that the projects may be reinstated in the future.

## AAEE Conference

The Australasian Association for Engineering Education (AAEE) held its successful *Annual Convention and Conference*, this year the 8th, at the University of New South Wales between 15 and 18 December, under the theme *Keeping Pace with Social and Tech-*



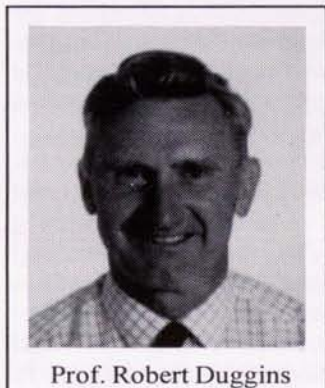
nical Change.

Close to 140 academics, industry representatives and postgraduate students attended the 1996 conference organised by the USICEE in collaboration with The University of New South Wales. Over 110 presentations were made and 106 papers were included in the Conference Proceedings, published by the Centre.

For the first time, the USICEE presented the 1996 USICEE Awards for a distinguished contribution in delivering an outstanding paper to the 8th Annual Conference of the Australasian Association for Engineering Education. The five award categories were Diamond, Platinum, Gold, Silver and Bronze. The Award Committee decided to present only the first two awards to the following authors:

- Diamond - *Resources for the resourceless - maximising student learning* by M.H. Murray of the Queensland University of Technology, Brisbane, Australia.
- Platinum - *Maximising individual learning* by R.G. Hadgraft of Monash University and J.K. Prpic of CAIA, Melbourne, Australia.

## The Institution's Thinking



Prof. Robert Duggins

A by-product of the Institution of Engineers, Australia's (IEAust) formal *Response* to the Review of Engineering Education is the revelation of the Institution's thinking on a number of important issues. To date, the *Response* has not received wide publicity and this is regrettable because knowledge of IEAust's thoughts would assist engineering departments in planning activities. The purpose of this note is to acquaint fellow engineering educators with some of the more interesting aspects and to add some comments of our own.

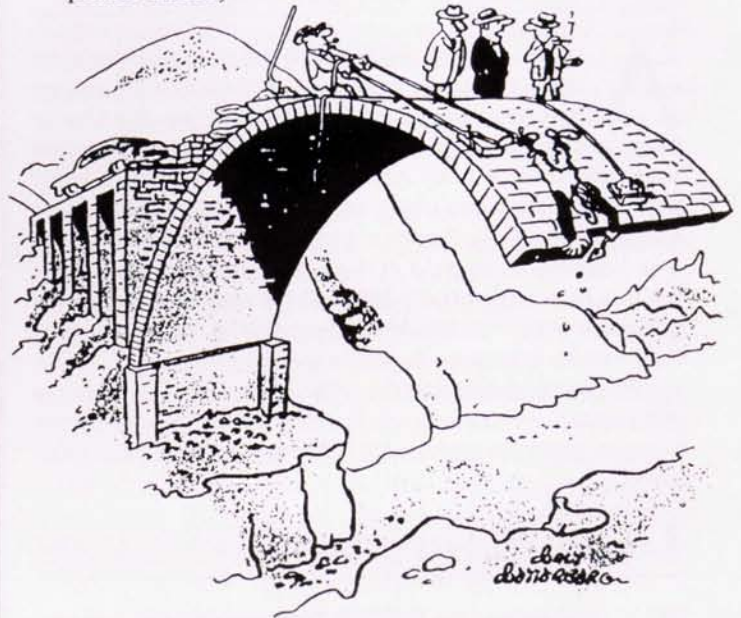
One such issue considered by the Review was the need to increase the number of women in the profession, and the relevant recommendation in the exposure draft report stated that:

*... in view of the continuing serious imbalance between the numbers of men and women entering the engineering profession, and the continuing predominance of men in the profession, IEAust, ACED (Australian Council of Engineering Deans) and ATSE (Australian Academy of Technological Sciences and Engineering) take appropriate steps to encourage more women to enter the profession and in so doing to draw particularly upon the resource of women engineers in developing and broadening the culture of the engineering profession to*

*make it more diverse and flexible and inclusive of a wider range of values and attitudes than at present.*

One would have expected universal and unequivocal support for the recommendation, but, surprisingly, the IEAust *Response* states that the wording is:

*... regarded as slightly offensive. It implies that the engineering profession would have advanced much further than it has today, if a significantly larger number of women had been involved. (Emphasis added)*



*May I ask where you studied engineering?*

Another of the Review's recommendations is that the content of BE courses be changed so that they give increased coverage to business and ethics. In this instance, the thrust of the recommendation has been accepted by IEAust.

This correspondent and many of his colleagues take a contrary view. A considerable amount of core engineering science material has already had to be deleted from our courses in recent years to accommodate the Institution's ten per cent management requirement, and the inclusion now being proposed of further peripheral topics will inevitably be at the expense of more of what remains of the core material.

Regarding the likely consequence of such actions, one is reminded of the above cartoon which appeared in *Scientific American*.

The young bridge-building graduate might answer *Although my course was generously endowed with management-related material, it was short of core Engineering.*

Incidentally, the recommendation that there be an increased coverage of business and ethics goes on to propose that this be achieved *with attention to social, environmental, political and economic context, appropriately integrated to provide a broad base relating to engineer-*



ing practice in a social context.

A third recommendation from the Review, attracting an unexpected and controversial response from the IEAust, concerns class contact hours. The recommendation states:

*That Deans take steps to reduce overloading of curricula and the formal class contact time required of undergraduate students in favour of alternative modes of learning and expanded opportunities for extra-curricula activity, and for engagement with industry.*

It reminds one of what the Williams Report of 1988 had to say on this topic, bearing in mind that, like the 1996 Review, Williams was concerned with engineering education. The sentence which attracted more media attention than any other was:

*Too many students think that an engineering course is a rather **unexciting hard slog** and considerable numbers of students drop out during first year. (Emphasis added)*

If those 1988 students and their successors see the 1996 Review report, what is their reaction likely to be? My guess is that:

- They will echo the observation, rightly made, that *little has changed* in the eight years that have elapsed since Williams.
- They will not be confident that the 1996 report will be any more productive than its predecessor, especially when they see that the recommendation proposes a *substitution* for formal class contact time, heralded by the words *in favour of*. They will probably say that they do not want any *in favour of's*, *thank you*; they want the reduction in contact hours, full stop.
- They will complain that, not only is the slog as hard as ever, little has been done to make the material in our courses more *exciting*. In fact, for two reasons, the situation is worsening. First, there is the move away from core engineering science topics such as recent developments and case studies. And second, there is the continuing move away from face-to-face teaching in favour of the electronic delivery of material.

Going back to the allegation in the Review that curricula are overloaded, IEAust's unexpected and controversial Response is that:

*It is not accepted that there is significant or widespread overloading of curricula, nor that formal class contact time for undergraduate students is generally excessive.*

It is not surprising therefore that little has changed since Williams. The Australasian Association for Engineering Education (AAEE) President, Prof. Mark Wainwright, holds a very different view from IEAust, as do my colleagues and I, and in the article he published in the June 1996 AAEE newsletter he presented data which quantified the seriousness of the workload problem. He went on to say that university engineering departments have recently taken the matter into their own hands (a very

regrettable state of affairs in itself), reducing the number of contact hours in their courses *to around 20 from the traditional 25 or 26 per week*. One had hoped that the Review would be similarly quantitative in specifying the reduction in formal class contact time it proposed but sadly it has chosen not to be.

### Concluding Remarks

- In contrast to the Williams Report that preceded it, the Report of the 1996 Review of Engineering Education contains little quantitative data on the various parameters discussed. Neither does the IEAust *Response*. A consequence is that measurable targets are conspicuous by their absence.
- Several of the elements of the IEAust *Reaction* are controversial, as are some of the Review recommendations themselves.
- Examples are the recommended moves away from face-to-face teaching and from core engineering material in our degree courses.
- The AAEE President has rightly reported that some university engineering departments have taken the matter of student workload into their own hands and substantially reduced the number of contact hours in their courses. Such actions conflict with the formal position being taken by IEAust, namely the view that there is no significant or widespread overloading of curricula and formal class contact time is not generally excessive.
- On this question of workload, the Review was somewhat ambiguous. Although a reduction in formal class contact time was recommended, it could be off-set by new course-related demands on students, leaving the overall workload situation in some doubt.

*Professor Robert K. Duggins  
Aerospace and Mechanical Engineering  
University College  
University of New South Wales  
Australian Defence Force Academy  
Canberra, Australia*

## Forthcoming Conferences

The following is a list of conferences, forums and congresses which are to take place around the globe over the next two years:

- England, Sheffield, 24-27 March 1997 - *2nd Working Conference on Engineering Education, Professional Standards and Quality in Engineering Education*. Organised by: The Engineering Education Research Group of Sheffield Hallam University. Contact person: Dr M. Bramhall, Tel: +44 114 253-3255, Fax: +44 114 253-3306, E-mail: ENG.EDF@shu.ac.uk
- Denmark, Odense, 5-9 May 1997 - *2nd International*



*Symposium of the Association of European Civil Engineering Faculties.* Organised by: Department of Civil Engineering, The Engineering College of Odense, Odense, Denmark. Contact person: Prof. Soren A. Hansen, Tel: +45 6613 0827, Fax: +45 6611 7803, E-mail: s-a-hansen@bret.iot.dk

- Russia, St Petersburg, 10-12 June 1997 - *International Conference on Engineering Education.* Organised by: The Russian Association for Engineering Education (RAEE) and the St Petersburg Mining Institute, in collaboration with the USICEE. Contact person: Prof. M.R. Liberzon, Tel: +7 095 200-2727 or 200-5032, Fax: +7 095 200-2606 or 209-6010, E-mail: mark@stc.asdi.msk.su or mark@inteh.msk.su
- Sweden, Stockholm, 14-17 June 1997 - *Teaching Science for Technology at Tertiary Level.* Organised by: Centre for Educational Research and Development, Royal Institute of Technology, Stockholm, Sweden. Contact person: Dr Soren Tornkvist, Tel: +46 8 790-8429, Fax: +46 8 790-6030, E-mail: tornkv@admin.kth.se
- Australia, Melbourne, 6-9 July 1997 - *1st Asia-Pacific Forum on Engineering and Technology Education.* Organised by: USICEE, Monash University, Clayton, Melbourne, Australia. Contact person: Assoc. Prof. Zenon J. Pudlowski, Tel: +61 3 990-54977, Fax: +61 3 990-51547, E-mail: ZJP@eng.monash.edu.au
- Philippines, Manila, 17-20 August 1997 - *5th International Conference on Engineering Education. AESEAP.* Organised by: College of Engineering, University of the Philippines, Diliman, Quezon City 1101, Philippines. Contact person: Dr Jonathan D.L. Salvacion, Tel/Fax: +632 928-3144 or +632 922-4714, E-mail: jonats@engg.upd.edu.ph
- Italy, Pavia, 14-17 September 1997 - *Mediterranean Region Seminar on Engineering Education.* Organised by: The USICEE, Monash University, in collaboration with the University of Pavia. Contact person: Mr John Zakis, Tel: +61 3 990-32467, Fax: +61 3 990-51547, E-mail: zakis@eng.monash.edu.au
- Lithuania, Vilnius, 26-29 September 1997 - *Baltic Region Seminar on Engineering Education.* Organised by: The USICEE, Monash University, in collaboration with the Vilnius Gediminas Technical University. Contact person: Mr John Zakis, Tel: +61 3 990-32467, Fax: +61 3 990-51547, E-mail: zakis@eng.monash.edu.au
- Poland, Cracow, 6-11 September 1998 - *Global Congress on Engineering Education*, incorporating the *5th World Conference on Engineering Education*, the *4th East-West Congress on Engineering Education* and the *1998 International Congress of Engineering Deans and Industry Leaders.* Organised by: The USICEE, Monash University, Clayton, Melbourne, Australia. Contact person: Assoc. Prof. Zenon J. Pudlowski, Tel: +61 3 990-54977, Fax: +61 3 990-51547, E-mail: ZJP@eng.monash.edu.au

## USICEE Publications

The following publications are available on request from the Centre:

*Proceedings of the 1995 International Congress of Engineering Deans and Industry Leaders*, edited by Zenon J. Pudlowski and Peter LeP. Darvall. The primary objective of the Congress was to provide an international forum for continued dialogue on adapting engineering education and research to the needs of less developed countries. Cost of volume: \$A100.

*Proceedings of the 7th Annual Convention and Conference of the Australasian Association for Engineering Education*, edited by Mohammad Aldeen and Zenon J. Pudlowski. Conducting its deliberations under the theme *Internationalisation of Engineering Education*, the *7th Annual AAEE Convention and Conference* addressed some of the major challenges confronting engineering educators in an age of educational globalisation. Cost of volume: \$A100.

*Proceedings of the 8th Annual Convention and Conference of the Australasian Association for Engineering Education*, edited by Ian F. Morrison and Zenon J. Pudlowski. The papers in this Convention and Conference Proceedings consider the many diverse issues of *Keeping Pace with Social and Technical Change*. Cost of Volume: \$A100.

*Proceedings of the 3rd East-West Congress on Engineering Education*, edited by Zenon J. Pudlowski. The Congress brought together engineering educators from East and West in order to continue the dialogue about common international problems in engineering education in an age of rapidly changing technology, and about the restructuring of academia in the context of the new economic conditions prevailing in countries of the former socialist block. Cost of volume: \$A100.

*Computers in Electrical Engineering Education – Research, Development and Application*, edited by Zenon J. Pudlowski et al. This monograph presents recent achievements in developmental research on the application of computers and computer technology to engineering education. Cost of volume: \$A50.

*The Application of Computer-Assisted Training Programs in Engineering Education*, edited by Zenon J. Pudlowski and Roger G. Hadgraft. Originating from a USICEE training course for academic teachers from the Asia-Pacific, this monograph will be of value to anyone interested in the most recent innovations in computer-aided teaching and learning, including the Internet and Electronic Library. Cost of volume: \$A70.

Note: In order to obtain copies of any of these volumes, please draw a cheque in favour of Monash University – USICEE, adding \$A10 to the cost of each volume ordered for postage within Australia and \$A20 for overseas postage, and send to USICEE at the address below.