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AUSTRALASIAN ASSOCIATION FOR ENGINEERING EDUCATION

NEWSLETTER

Vol.2, No.2 Sydney, June 1990 2,5,0060

Members of the Executive Committee of the Australasian Association for Engineering Education, Professor Peter LeP Darvall - Conference Chairman, and Members of the Conference Organising Committee cordially invite you to submit proposals for papers and to attend the 2nd Annual Convention and Conference, to be held at Monash University, Melbourne, between 9 and 11 December, 1990.

This issue is sponsored by The Electrical Engineering Foundation, University of Sydney

AUSTRALASIAN ASSOCIATION FOR ENGINEERING EDUCATION

2ND ANNUAL CONVENTION AND CONFERENCE

AN INVITATION TO SUBMIT A PAPER AND TO ATTEND

Venue: Monash University, Clayton, Victoria

Date: Sunday - Tuesday, December 9 - 11, 1990

Chairman: Professor Peter Darvall, Dean of Engineering, Monash University

New Pathways and Methods in Engineering Education is the theme of the Second Annual Conference, the objectives of which is to further the development, diversity and quality of engineering education in Australasia. Authors in education and industry are invited to submit a wide range of papers.

Conference sub-themes are:

* Promotion of science and technology in schools
* Bridging courses to engineering
* Industry/academia co-operative education
* Articulation in the range trade certificate to professional degree
* Distance education
* Postgraduate and continuing professional education
* Balancing the curriculum between technical and general material
* Application of teaching technologies and self-directed learning
* Implementation of recommendations from recent reviews of engineering education
* New course structures in engineering and technology
* Combined degrees
* Retention, productivity and quality assurance in engineering education
* The role of educational psychology in engineering education
* Computer simulation versus laboratory experimentation
* Engineering education in industry
* Promoting excellence in engineering education
* Student response to engineering courses

The Association's Second Annual Convention will be held in conjunction with the Conference on Sunday, December 9.

The Minister for Industry, Trade and Commerce, Senator John Button, has been asked to address the Conference Dinner, to be held in the Great Hall of the National Gallery of Victoria, on Monday, December 10.

A call for conference papers has been sent to organisations and individuals. Prospective authors should submit abstracts of 250-400 words, outlining aims, content and conclusions of their papers, indicating the sub-theme into which they fall. The best papers will be selected for publication in the *Australasian Journal of Engineering Education*. There will be an award for the best paper presented at the Conference, and a separate award for student authors.

The abstracts, which should show author(s) name(s), affiliation, mailing address and phone number, should be addressed to: Dr Michael Taylor, Conference Organising Committee Secretary, Department of Civil Engineering, Monash University, Clayton, Vic. 3168, Australia. Please note deadline for receipt of abstracts: 30 June, 1990. Notification of acceptance will be posted by 10 August, 1990.

AN INVITATION TO THE AAEE 2ND ANNUAL CONVENTION AND CONFERENCE

Peter LeP Darvall

Engineering educators are struggling with reduced resources, increased student/staff ratios and an uncertain national conviction about the great importance of education for a technological future. Overall, there is a faltering demand for entry to engineering courses, and a shortage of new staff. But more than ever there is a need for our graduates to be the ones who *make things happen* in Australia.

In this climate, the AAEE was founded in 1989. Among its objectives are an increase in participation rates, the enhancement of the quality, relevance and performance of engineering education, and the promotion of new teaching techniques.

There is much to do, and great opportunities for improvement. I believe that the common image of engineering education is daunting, even demoralising. We have not sold what Samuel Florman calls *The Existential Pleasures of Engineering*. Many of our courses lack glamour, and often we employ methods more for their economy than their effectiveness.

But there are some exciting ideas, and some inspiring stories to tell. I extend a personal invitation to my colleagues in engineering education to reveal their innovations at the 2nd Annual Convention and Conference of the AAEE at Monash University in December. Engineering educators are doubtless a national treasure, and as much treasure as possible should gather for this important conference on *New Pathways and Methods in Engineering Education.*

The conference topics, listed elsewhere in this Newsletter, have been chosen to allow a wide variety of issues to be discussed, including the generation of opportunities and interest, new structures, new methods, quality enhancement and control, engineering education in industry and customer response.

We will celebrate our noble cause and our hopes for the future of engineering education at the Conference Dinner in the magnificent Great Hall of the National Gallery of Victoria on Monday, December 10. Senator John Button has been asked to address us. I look forward to seeing many of you there.

Professor Peter LeP Darvall
Dean of Engineering
Monash University
Conference Chairman

FROM THE PRESIDENT

I have had occasion to reflect a little on the turbulence through which higher education has passed over the last year or two.

Almost all the planned amalgamations are now a reality and I am sure we are all struggling to keep up with the new institutional names already announced - let alone those still to come. Even if the election in Australia had gone the other way, it is clear that these new structures and the challenges they present would have remained. What then are those challenges?

We are now a part of a National Unified Scheme. It seems the greatest challenge is to

define what is meant by Unified. To me, it does NOT mean that all institutions should be attempting to produce cloned graduates indistinguishable from each other. It does not mean that even within the same institution we should be producing the same formula in the graduates of theory/practice, education/vocation, or practice/research.

Clearly we all have a responsibility to produce the correct BALANCE of graduate skills and capabilities which are required for Australasia's current and future needs. We cannot afford to create gaps in this continuous spectrum of skills.

Many staff in the institutions, as well as employers and the community at large, will need to go through a significant learning period. But, now that we are all together, we are in a better position to PLAN the overall education and training needs and desires for the community we would like to have in the future.

I would like to think that engineers are the world's best planners. If so, we have a marvellous opportunity to take the initiative at this time of change and to influence the direction of higher education towards that vision of a healthy, sustainable, wealth creating society for which I aspire.

I do hope I am not alone in my optimism and aspiration!

Professor Trevor W. Cole
President of AAEE

THE ELECTRICAL ENGINEERING FOUNDATION WITHIN THE UNIVERSITY OF SYDNEY - A HISTORY.

Hugo K. Messerle

Following is a short history of the Foundation, which prospective members may find interesting. At the first meeting of the Electrical Engineering Foundation, held on February 9, 1984, the then Chancellor, Sir Hermann Black summarised its primary purpose as building and maintaining a bridge between the University, industry, and the wider community.

The first movement towards an organisation of this kind came during World War II. In the 1950s the School established the University of Sydney Electrical Engineering Graduates Association (USEEGA).

In the 1960s USEEGA decided to set up an Industry Advisory Panel (IAP) to consist of up to 20 senior industrial executives. It proved a success in getting feedback from industry at the highest level and many activities were initiated and activated through sub-committees. Involvement however was limited due to lack of funds.

Foundation Begun

In 1983 after extended discussions, it was agreed to formalise and strengthen the links with industry by setting up the Electrical Engineering Foundation. Approaches were made to a number of companies and government authorities, in particular members of IAP, to provide initial support for the Foundation. A draft constitution was submitted to the Senate of the University and approved in August 1983.

The initial subscribers to the Foundation included 8 organisations, six being Governors, and

5 personal members. At its first meeting the Council of the Foundation decided to set up an Executive Committee which has met regularly since. Five sub-committees were also established to focus on specific areas of interest. These initial five have evolved to the current subcommittees:

* Research and Industry Interaction;
* Undergraduate and Higher Degree Training;
* Seminars and Courses;
* Postgraduate Diploma in Computer Systems Engineering;
* Graduates and Publications.

Financially, the Foundation started off with the support from the membership fees provided by the original members, and a guarantee from the then Vice-Chancellor, Professor John Ward, to assist us through the first three years if required. The Foundation never had to make use of this guarantee.

Projects and other activities run by the Foundation are expected to be self-supporting and have to provide the Foundation with a fee for management. Not all activities are necessarily financially viable, and the Foundation may then act as an underwriter. The overall turn-over per annum has grown substantially. Any profits are usually retained by the initiating body.

The Foundation has gone on developing. In 1986 the *Foundation News* was established. Student prizes were established in 1987 and 1989, and the management of the Foundation was restructured into an academic branch and a projects branch in 1988.

New Centres

In 1988, it provided some seeding funds for the Optical Fibre Technology Centre, which has since grown dramatically and has attracted several million dollars from industry. In 1989, it took on the planning and management of the Advanced Plasma Engineering Centre, which was set up in cooperation with the Electricity Commission of NSW. In 1990 it has taken on the sponsorship and management of an emerging centre on Electric Drives.

Another area where the Foundation and its members have become involved is the development of advanced training programs. The industry-based courses forming the back bone of the Computer Systems Engineering Postgraduate Diploma have been developed with intensive collaboration of dedicated staff from Foundation members. Several committees were involved in intensive planning activities to get the program started in 1989.

These efforts should serve as initial steps towards a much closer interaction with industry in the continuing and advanced education of our graduate engineers. We should aim to get industry much more deeply involved in the advanced training of engineers, including the training of Masters and in due course, PhD candidates. These candidates should eventually be carrying out their research programs, at least in part, in accredited industries under the associated supervision of industrial specialists.

The Foundation has proved its value to the School and is truly serving as a bridge linking us with industry and commerce. The large yearly turn-over of funds has come from financial enterprises which, in extent and involvement, rival those of the Warren Centre. Management of so many diverse activities, with only the one Administrative Officer, has been feasible only through largely voluntary support from staff from the School and from Foundation members.

Professor Hugo K. Messerle
Director
The Electrical Engineering Foundation

GOING ON-LINE: A GATEWAY TO COMMUNICATION

Rapidly increasing capabilities in electronic communication can be used for information, entertainment and education. AAEE has a strong interest in exploring how such technologies can support its work.

In the next couple of months all tertiary education institutions and CSIRO divisions will be connected by AARNet - the Australian Academic and Research Network permitting data file and electronic mail communication around Australia (and overseas) without cost to the user.

As a result, AAEE has created its own electronic Bulletin Board as a service to its members. If you are a member and join the board, you will receive automatically all the messages sent to the board. If you have something to say to other members of AAEE, then simply mailing it electronically to AAEE will lead to the message being forwarded to all the registered members on the network.

The potential of this service is large. Members could be kept informed of seminars, conferences, interesting articles, research projects and opportunities, visitors to Australia, or they could even begin a computer conference on topics of mutual interest.

Successful boards work through a minimum of supervision. Nevertheless, the Executive Committee will monitor activity and attempt to curb useage outside the focus of AAEE.

So, to join, all one has to do is to provide AAEE with your electronic mail address and your name will be placed on the bulletin board address list. Send your address to **trevor@ee.su.oz.au** to be added to the list. If a member has something to say on the board, then the contribution is mailed to **aaee@ee.su.oz.au** and it will be automatically forwarded.

In the longer term it would be good to explore a gateway into other electronic mail systems such as Keylink and Dialcom so that industry members and others will be assured of a means of joining the network.

Other developments are occurring in the areas of distance education and videoconferencing. For AAEE the potential of these techniques are enormous, especially for continuing and further education of people in industry. In a later newsletter, developments such as UNINET, the new NSW Government telecommunications network, the government networks in SA, Vic, Qld and WA, as well as the developing situation in standards and Telecom's Integrated Services Digital Networks (ISDN) will be discussed.

Trevor W. Cole
Professor
School of Electrical Engineering
The University of Sydney

EXECUTIVE COMMITTEE OF AAEE MEETS FOR THE SECOND TIME

A second meeting of the AAEE's Executive Committee was held on Thursday, 1 March 1990 at 4 p.m. in the School of Electrical Engineering at The University of Sydney. The Agenda included several important items. One of these was the venue for the 2nd Annual Convention and Conference of the AAEE in 1990. Two submissions, from Monash University and the Swinburne Institute of Technology, were received and considered.

After a lengthy discussion, the Committee decided to ask Professor Peter LeP Darvall, Dean of Engineering at Monash University, to form an organising committee and undertake

necessary work to organise the 2nd Annual Convention and Conference at Monash University, in conjunction with other tertiary engineering institutions in Melbourne.

After considering the dates of various examination meetings etc, it was suggested that the meeting be held December 9 to 11, 1990, as proposed by Prof. Darvall. The Association will provide a basic underwriting of initial expenses, and it was decided to authorise a payment of $3,000 from the AAEE account to establish a conference account. Prof. Darvall has kindly suggested that the net profit from the conference be transferred to AAEE.

Also on the agenda were the Association's activities for 1990. Members of the Executive Committee discussed the possibility of conducting and/or co-ordinating research projects. Discussed were such project proposals as a survey of engineering education research and developmental activities within Australasia, a survey of engineering education publications, future research projects on engineering education which may be co-ordinated by the AAEE, and the establishment of a collection of statistics on engineering education, including engineering courses and curricula.

The Committee has decided to conduct a survey of engineering education and a questionnaire to this effect is included in this issue. Topics on which we will collect data include the structure of engineering education institutions, engineering education research and developmental activities and engineering education publications. Two Committee members, Scott Grenquist of the University of Newcastle and Zenon J. Pudlowski of The University of Sydney, devised the questionnaire and have agreed to supervise the project. The questionnaire, and general information are on a perforated pages at the back of this issue.

A call for renewal of membership is also made in the single-page reminder. Members are kindly asked to renew membership, and to encourage colleagues, who are not yet members, to join the Association.

The journal of the Institution of
ENGINEERS
AUSTRALIA

March 23 1990

REDRESSING THE SHORTAGE OF ENGINEERS

by Christopher Connolly

Engineers are in short supply. According to Dr Brian Lloyd and Michael Rice, directors of EPM Consulting Group, more engineers will be retiring or dying in the near future than new engineers entering the workforce.

For example, Telecom said it employs 2000 communications engineers but needs another 200. BHP Engineering said it has problems with a shortage of skilled engineers but not an overall shortage as such. The Melbourne & Metropolitan Board of Works said it has also had difficulty filling positions.

Federal Education Minister John Dawkins acknowledged the shortage in his Australia Day address when he said the country cannot build a first rate industrial sector with second rate technology and without encouraging its most inventive and original minds. *We must close the book on the 80s as a decade where the paper profiteers occupied centre stage to the ultimate cost of many of them,* he said. *Currently it is costing this country $367 million*

every year to import technical knowhow developed elsewhere in the world. Australia on the other hand receives just $42 million in overseas royalties for our home grown developments.

At present the shortage is at least partly offset by inflation. In 1987/88, 2389 scientists, engineers and academics left Australia for purposes other than short term visits of less than 12 months. The corresponding influx was 7089 resulting in a net gain of 4700. Of these over 3000 were engineers. This figure is roughly equivalent to the number of engineers graduating annually in Australia.

The problem does not seem to be restricted to Australia. For example, the EPM Consulting Group has found that during the next ten years more than 50% of the engineers employed in the US aerospace industry will either die or retire.

With this worldwide shortage of engineers, Australia will not be able to bolster its flagging numbers with immigrating engineers for much longer. According to Lloyd and Rice, greater starting salaries in the US, $A38,000 compared with $25,000 in Australia, will not only stem the tide but will also draw Australian engineers out of the country.

However, in a letter to *Engineers Australia* on March 9, R Atkins of Wanganui in New Zealand queried whether, if there is a shortage of engineers in Australia, it might just be part of a cyclic variation.

Lloyd agreed there was an oversupply in the late 1970s but in the early 1980s it ran equal with demand and in recent years it has fallen short badly but been bolstered by immigration. He believes that by the mid 1990s the issue will have reached crisis point.

At the same time, school leavers seem to be shying away from engineering and science subjects in favour of economics and business subjects. During a discussion session at the first annual convention and conference of the *Australasian Association for Engineering Education* in Sydney late last year it emerged that a number of engineering schools had reported a drop in the number of students placing engineering as their first preference after finishing high school with figures of 10% common.

Since 1984, the HSC mark required to get into engineering at Sydney University has dropped from 375 to 338 while the economics mark has risen from 348 to 386. At the University of NSW, economics has broken the 400 barrier rising from 395 to 401 in the last year, while electrical engineering has dropped from 382 to 368 and other engineering disciplines have had similar declines.

Once again this does not appear to be restricted to Australia. A report in a recent issue of the *New Scientist* noted there had been a significant drop in the number of school leavers applying to study engineering at British universities and polytechnics. At the same time there had been a marked increase in applications for courses in law, economics, business and management.

So why are students deserting engineering for other subjects? A major problem appears to be money. IEAust director of public affairs Michael Dack said that all graduates start on or near $25,000 but the engineers' salary range is very narrow, leaving little room for substantial increase. *Ten years down the track they might only be earning $35,000,* he said. *That is why so many engineers move into management.*

Another reason for the declining numbers could be a lack of quality maths and science teachers in the country. The NSW Teachers Federation believes the current shortage of maths and science teachers is a result of media hype about the importance of management/economics subjects. John Poulos, editor of the Federation's journal, said the shortage of maths and science teachers is being masked by the NSW Department of Education's scheme for creating combined english/maths/science teachers in a 10-week

conversion course. This is an ineffective short-term solution, he said. *I believe we are past the critical point of redressing the problem in the short term.*

He feels the only solution is for a joint federal/state initiative to conduct a campaign *to put maths and science back in its rightful place in society* and to provide scholarships for maths and science students. He does not believe increased pay for maths/science teachers will solve the problem. On the contrary it will create divisions between teachers and will detract from the overall development of students, he said.

To entice more school leavers into engineers, the IEAust is active on the Divisional level. Carol Sturch of the Sydney Division said they put on displays at various career markets and expos. They will also run four career nights this year for secondary school students and arrange for guest speakers to go around to different schools.

Several engineering schools are trying to attract more students by introducing more management-related subjects. However, Dr Zenon Pudlowski, executive director of the AAEE, said *introducing more management subjects does nothing to solve the problem since it only encourages more engineers to forsake the profession for managerial positions, with their corresponding bigger pay packets.* Although he sees the switch to management from engineering as inevitable in the course of an engineering career, this should only be catered for in postgraduate courses rather than at the undergraduate level.

He said one of the most promising ways to redress the shortage of engineers is to make the profession more attractive to women. The Williams Report (Review of the Discipline of Engineering), published in 1988, cited four reasons for the low participation rate of female students. These were:

* community perceptions of engineering as inherently a male profession, and subsequent conditioning at home and at school that it is inappropriate for girls

* lack of community understanding of the nature of engineering, and inadequate or inappropriate counselling in schools about the relevant career possibilities

* lack of support within the engineering profession for entry of qualified women, as well as a lack of appropriate role models and concern over possible discrimination, both in the course and in subsequent employment

* inadequate emphasis on science and mathematics education in schools and the apparent reluctance of girls to choose these necessary background subjects.

Pudlowski suggests the introduction of a combined bachelor of engineering/bachelor of education degree which could indirectly prove successful in attracting more women into the profession. He said when he set up a similar course in Poland, 60% of the students were women. The resulting female teacher/engineers from such a course could have a substantial impact on girls' views of engineering and their choice of subjects at school.

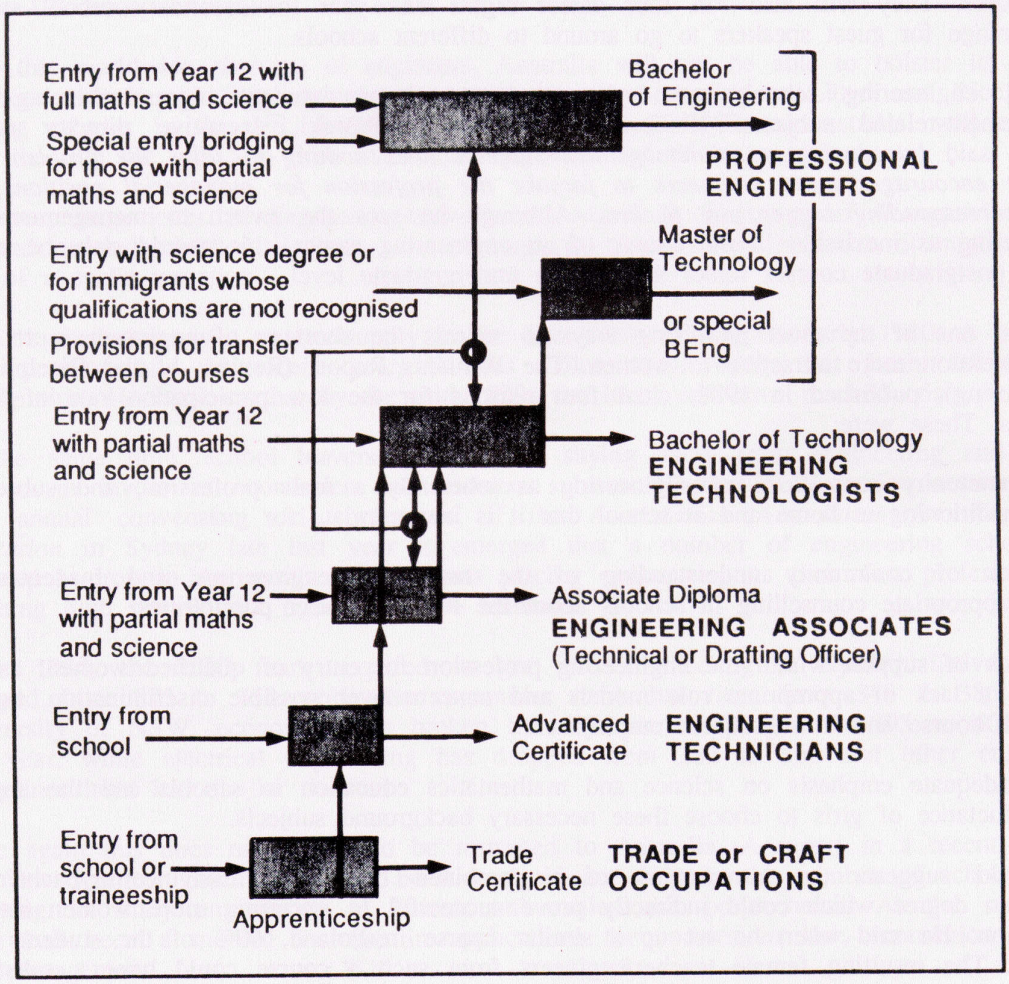
He said there is a clear link between the subjects girls are encouraged to do at school and their later choice of profession. An example is chemical engineering, which has a far greater number of female engineers than any other engineering discipline. This corresponds with the fact that 41% of Year 12 chemistry students are girls, whereas only 27% of Year 12 physics students are girls.

Another major group, apart from women, that could be drawn on are those people who forsook the senior years of school and tertiary education to do apprenticeships.

The EPM Consulting Group has recently produced a book, in association with the IEAust and APEA, called *New Pathways in Engineering Education.* The authors (Brian Lloyd,

Michael Rice, William Roebuck and Eric Stokes) have proposed a concept of articulated education that allows people to become professional engineers via a number of different paths.

They say there has been criticism about the Australian system concerning excessive rigidity in the pathway to professional engineering, confined as it is to the 4-year degree in engineering (or equivalent part-time or co-operative modes) entered from the mathematics and science streams at school. *The element that is missing in Australia is a course near professional level, providing access pathways from paraprofessional level to bachelor degree level.*



This flow chart from EPM's **New Pathways in Engineering Education** *suggests alternative points of entry to the profession.*

Another option to increase the number of engineers is to improve the attractiveness of their education and try to retain those students who, disillusioned, leave part-way through the course or who abandon engineering after graduation. Some of this disillusion can be caused by what students perceive as bad teaching.

Also many lecturers lack practical experience and are thus at a disadvantage in conveying the *real world* of engineering. According to the Williams Report, only about 60% of academic staff in engineering schools have ever had any substantial experience outside the higher education system and that only about 40% have ever been employed for a year or

more outside the government sector.

Pudlowski believes lecturers should undergo some teaching training so as to enable them to put their message across more effectively. He said this training should be offered by the engineering faculty rather than the education faculty because engineering requires certain special skills to teach.

Teaching research and development has been left sadly lagging behind, and it will continue to be eroded, he said. *In addition, overspecialisation in engineering education has led to an estrangement between the various traditional and emerging new branches of science, technology and engineering.*

A National Centre for Advancement of Engineering Education and Training was set up at Sydney University during the AAEE conference last year. Pudlowski is hoping this centre will be instrumental in the development of a new teaching methodology.

NEW MEMBERS OF AAEE

The membership of AAEE has significantly increased over the last few weeks. It is encouraging to see professors, senior academics and industry leaders joining the Association, as well as many undergraduate and postgraduate students, who are particularly concerned with engineering education.

Commencing in this issue, we will include short biographies and photographs of a few new members, who have been randomly selected for presentation in the Newsletter. **Dr Sharon Beder** and **Dr Branka Vucetic**, two academics of high professional esteem, and who have a strong interest in engineering education, are presented here:

Dr Sharon Beder was recently appointed as Environmental Education Co-ordinator at The University of Sydney. She will be working on ways to co-ordinate environmental education within the University and to disseminate environmental knowledge throughout the community, including schools. This project is being funded by the Federal Department of Education, Employment and Training.

Sharon comes to the job from the School of Science and Technology Studies at The University of New South Wales where she was a lecturer. Her PhD, which she obtained in that School last year, was on engineering decision-making and used Sydney's sewerage system as a case-study. A book based on her research, entitled *Toxic Fish and Sewer Surfing*, was published recently by Allen and Unwin.

Having started her career as a civil engineer, Dr Beder has an active interest in engineering education and for the past two years has lectured to electrical engineers at The University of Sydney on non-technical aspects of engineering. She feels it is particularly important that all engineers graduate from university with an understanding of the relationship between people and the environment and a respect for and a sense of responsibility towards the environment.

Dr Branka Vucetic is a Senior Lecturer and the Director of the Communications Science and Engineering Laboratory in the School of Electrical Engineering at the University of Sydney. She has extensive experience in digital communications, modulation and coding, having worked consistently in the research field for 15 years, and has been involved in industrial contracts and academic training.

At Belgrade University she was involved in the development of error-correcting codecs and simulations of digital communication systems with error control. She has also worked on coding for high-speed digital radio systems at the South Australian Institute of Technology and error-control coding for digitised voice at Telecom Research Laboratories, Melbourne.

At Sydney University she has been involved in the development of the digital communication software SAT, in Viterbi VLSI codec design, design of concatenated coding

scheme for OTC super-group modem, and research and development of signalling techniques for satellite mobile communications. Most recently she has been working on the development of a modem for the satellite mobile channel, and a high-speed modem for facsimile transmission.

Branka Vucetic obtained her BSc in 1972, MSc in 1978, and a PhD in Electrical Engineering from Belgrade University.

ENGINEERING EDUCATION SURVEY

The success of the AAEE depends very much on bringing together the ideas and innovations of engineering education separated by extreme geographical, disciplinary and cultural barriers. One of the greatest services that AAEE can perform for its members is the efficient dissemination of information about the field in which we work. The *Australasian Journal of Engineering Education* and the highly successful Convention and Conference, held last year, have been great strides toward this goal.

However, as we move into our second year, many AAEE members must be wondering how this network of information transfer can be even further enhanced. The answer to that is not a simple one. The only certainty is that the measure of success that can be attained by AAEE will be proportional to the commitment of its individual members. Whether our education research and development remains isolated within our own disparate institutions, or becomes common practice throughout Australasia is entirely within our own hands.

An essential step in the development of AAEE is gathering information about institutions involved in engineering education, engineering education research and curriculum design. Toward that end, the survey shown on the next page has been sent to institutions throughout Australasia in an attempt to gain the most current information on their staff, programmes, educational research and publications on engineering education.

As in any survey, the currency and accuracy of the data are most important. Although some of the information required in the survey may be obtained through exhaustive library searches, a comprehensive approach to each institution allows for comparisons to be made in a broader context. To achieve this, we have designed a concise format for the questionnaire. This should allow the completion and return of the questionnaire within a suitable amount of time. Two months should be ample time for all of the institutions contacted to respond, but assuredly many will respond sooner.

The percentage of respondents and the accuracy of the information collected can be positively enhanced by the involvement of each of us as members of the AAEE. If each member were to assure the completion of the questionnaire by their respective institution, then a significant percentage of the institutions surveyed would definitely respond.

Once this information is gathered, each of the respondent institutions, and all AAEE members will receive the comprehensive results of the survey. In this way, our individual service to AAEE will be directly reflected in the service that AAEE can provide to us - its constituent members.

Scott Grenquist
Executive Committee Member of AAEE
Department of Industrial Technology
School of Administration and Technology
University of Newcastle

SURVEY QUESTIONNAIRE

Name of Institution: .....

School, Department or Division .....

Postal Address .....

.....

Dean of Engineering or Head of School/Department: .....

Chairmen of Eng. Departments/Specialties (Alphabetical by Department): .....

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Undergraduate and postgraduate instruction areas of special strength: .....

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Notable examples of new course development: .....

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Examples of use of innovative educational techniques/media: .....

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Do you have a structured course assessment procedure? .....

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Staff particularly interested in new course development, course presentation techniques and course assessment or improvement (Give names):

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Accepted higher degree theses relating to engineering education and industrial training since 1985 (Alphabetical by author and title):

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Research and developmental projects being undertaken in the area of industrial and engineering education (since 1985):

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Grants received for educational research and development (Value and source of support i.e. ARC, State Government, Local Government, foreign source, industry, etc):

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Publications dating from 1985 related to engineering education (Attach separate sheet if necessary):

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AUSTRALASIAN JOURNAL OF ENGINEERING EDUCATION IS LAUNCHED

At the Meeting of the Executive Committee, held during the 1st Annual Convention and Conference of the AAEE, a decision was made to establish its journal, the *Australasian Journal of Engineering Education (AJEE)* with Dr Z.J. Pudlowski as Editor-in-Chief.

The paramount objective of this *Journal* is to provide an international forum for discussion and a source of information exchange on research and developmental activities in engineering education, with particular emphasis on the improvement of the supply and quality of those engineering skills needed to develop and advance Australasia. International co-operation and interaction with academics and institutions concerned about engineering education is also an important objective of the Journal.

The initial idea was to incorporate the AJEE into *The International Journal of Applied Engineering Education (IJAEE)*, published by Pergamon Press. The Editor-in-Chief was involved in intensive negotiations with Pergamon and Professor Michael S. Wald, Editor-in-Chief of IJAEE. Prof. Wald was enthusiastic about the idea of having the AJEE as a special supplement, published twice a year and included regularly in the IJAEE. There are obvious advantages and disadvantages implicit in such an arrangement.

After a formal agreement appeared to be reached between the two parties, Pergamon proposed publication arrangements which were significantly different from those agreed earlier. Discussions with a number of members have proved fruitful, in that we have agreed that the new conditions make publication of our Journal with Pergamon totally unacceptable to AAEE. A decision subsequently was made to establish the *Australasian Journal of Engineering Education* as a fully independent entity, relying on the support and sponsorship of the Institution of Engineers, Australia. This has slightly delayed the release of Vol.1, No.1.

The first issue, consisting of mostly expanded versions of selected papers, which were presented at the 1st Annual Convention and Conference of the AAEE, held last December at the University of Sydney, is almost complete. It is anticipated that it should be in circulation in September, this year. With the availability of electronic mail communication around Australia and overseas, it has been possible to establish a computerised version of the *Australasian Journal of Engineering Education* as a new service to members of AAEE. This electronic version will consist of the titles, authors and abstracts of the articles included in the journal. By logging on to **ajee@ee.su.oz.au**, all users of electronic mail will receive access to this new facility.

As a result of these developments, a call is made for papers on any topic or activity relevant to engineering education and industrial training. Potential authors are cordially invited to submit their contributions in the form of a paper to be considered for inclusion in the Journal. Authors should mail a hard copy of the paper to the Editor-in-Chief. Include two copies of the paper for referees. Illustrations, including tables, should be in black ink. An **ASCII** code file on a 5.25 inch diskette, suitable for an IBM PC, is essential to avoid incurring charges for retyping the paper. In addition, authors are asked to supply a passport-sized photograph (35 x 45 mm) and a short biography of no more than 100 words. Papers must be prepared according to the instructions, as outlined in the *Notes for Contributors*, which will be mailed on request.

It is not intended that this journal become a commercial enterprise. The publisher is therefore prepared to subsidise its publication so that it is affordable to every individual concerned with engineering and technology education and industrial training. The subscription rate for 1990 (2 issues) is set at $A30. Anyone wishing to subscribe to the AJEE should indicate this in the membership ***Remittance Form*** included in this issue or contact the Editor.

Students enjoy the summer sun at Monash University, Melbourne, Victoria. Monash, one of Australia's newer tertiary establishments, is the venue for the AAEE 2nd Annual Convention and Conference in December, 1990.

For details of the Association and membership applications write to the Editor:

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