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IEEE NEW SOUTH WALES SECTION
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1. CHAIRMAN'S COLUMN

Although my request in the last newsletter didn't provoke a wide response, the Section Committee has not been idle in trying to work out how we can best provide value for members in NSW. By means of a committee process we identified a

number of issues to which we can turn our attention over the next six months. These include:

- **Finding** new ways to rejuvenate our presence in Universities by finding student counsellors and improving our communication with students.
- **Increasing** the number of seminars and technical meetings that are accessible to students.
- **Completing** our CD ROM project to provide a resource that outlines the exciting opportunities a career in electrical & electronic engineering, computer science and information technology brings and the pathways to such a career (see elsewhere in this newsletter for a call for help with this).
- **Bidding** for major international conferences to be held in Sydney (and wider in Australia).
- **Promoting** and enhancing our distinguished lecturer programs, and encouraging more IEEE distinguished lecturers to visit Australia.

You will have noticed a focus on student activities, which is an area where we have traditionally had variable success. We do run a subsidized student membership program, and those students who signed up this year will shortly be receiving their membership acknowledgement. However, we want to do more to encourage young engineers to get involved with IEEE and continue that involvement as they move into the early stages of their careers. Our GOLD Affinity Group plays a valuable role in this, and we thank Filita Barker for her efforts in establishing the group.

We have already made a start with regard to conferences for 2004. We are pleased to support the Asian Control Conference, which will be held in Melbourne, and the International Symposium on Spread Spectrum Techniques and Applications, which will be held in Sydney. These conferences are jointly financed by several Australian IEEE Sections, continuing a strong tradition of cooperation between Australian IEEE

Sections. More details will be available in future newsletters and on our web site.

I add my congratulations to Bruce Poon for winning the IEEE Region 10 Outstanding Volunteer Award for his sustained support of the Section over many years.

Please continue to support the Joint Technical Program and other activities of our Chapters. You will find information on some of these in this issue.

Andrew Parfitt
Chair (email: andrew.parfitt@csiro.au)

2. NSW JOINS INFORMATION THEORY CHAPTER

The New South Wales Section has decided to join the ACT, South Australia and Victorian Sections in forming a combined Information Theory Chapter.

The Chapter will be listed as the joint Section Chapter (ACT/SAVIC/NSW) of the IEEE Information Theory Society. Administratively, it will report its annual activity through the IEEE South Australia Section. The Chapter Chair is Alex Grant and interested members should contact Alex for further details (Alex.Grant@unisa.edu.au).

3. STUDENT ACTIVITIES' REPORT

You will recall that, in the last issue (March 2003), the IEEE NSW Section announced it was once again offering for a limited period (closing 31 March 2003) free memberships to students in their second or higher year of a recognized Electrical Engineering/Computer Science degree courses at universities in New South Wales, who are not already members of IEEE. In response 170 student applications were received by the closing date.

Please look out for news on the website about a networking function we are planning for late August. We are hoping to get students mingling with more experienced members including GOLD, for their mutual benefit.

We are pleased to announce the formation of a Macquarie University student branch. A function is planned to celebrate this event and all IEEE members are invited to attend. Watch out for a future announcement in the News section of the Section web site <http://ewh.ieee.org/r10/nsw>.

The Section is calling for volunteers to be Campus Counsellors to support the work of the Student Branches. Please see the 'Wanted' section of this issue.

If you have any queries or ideas for student activities please contact Stephanie Boyd, Student Activities Chairman, on (02) 9410 1995 or email stef@isb.net.au.

4. GOLD AFFINITY GROUP NEWS

The first function of the GOLD Affinity Group in 2003 was held on 27 March. A certificate of appreciation was received from IEEE RAB. The GOLD Chair, Filita Barker, is overseas for six months from June and we wish her well on her travels. In her absence, Simon Boland will be Acting Chair of the GOLD Affinity Group and Elias Aboutanios will assist him.

The GOLD Group is looking for places to do site visits and, if anyone has any suggestions, please contact Simon or Elias on: gold_nsw@yahoo.com.au.

5. BRUCE POON RECEIVES REGION 10 OUTSTANDING VOLUNTEER AWARD

In the March issue, it was reported that Bruce Poon was the first recipient of the NSW Section Outstanding Volunteer Award. Bruce's contributions to the work of the IEEE have now been recognized by Region 10. Recently, the 2002 Region 10 Outstanding Volunteer Awards were announced. The recipients are:

K. Rajgopal of Bangalore Section
S.C. Bhargave of Hyderabad Section
N.T. Nair of Kerala Section
B. Poon of NSW Section.

Prof. K Rajgopal has been invited to receive the Outstanding Volunteer Award Certificate in the forthcoming Penang Region 10 Committee Meeting. The other three winners received a certificate. Bruce Poon was presented with his certificate at a recent NSW Section Meeting.

6. SECTION OUTSTANDING VOLUNTEER AWARD – CALL FOR NOMINATIONS

Nominations are now invited for the NSW Section Outstanding Volunteer Award for 2003. The Section established this annual Award in 2002. The Section's outstanding volunteer becomes the nominee for the corresponding Region 10 award. The selection criteria are the same as for the

Region 10 award, which are given on the Region 10 web site www.ewh.ieee.org/reg/10.

Please send your nomination, along with reasons for the nomination, to the Secretary, David Burger, IEEE Committee C/- Professional Centre of Australia, Private Bag No. 1, Darlinghurst NSW 2010, or email k3hz@ieee.org.

7. ANNUAL REGION 10 MEETING POSTPONED

The annual Meeting of Region 10 Sections due to be held in Penang, Malaysia, in early April was postponed until September due to security and health concerns.

8. NSW SECTION WEB NEWS

The Section web site is now one of the main ways of keeping members in New South Wales informed. The Web Master, Jon Agnew (jpagnew@ozemail.com.au), does a fabulous job of maintaining this resource. Place the web

10. USEFUL IEEE WEB ADDRESSES

Increasingly, the IEEE is relying on the Internet to deliver services to members. Some useful web addresses are summarized below for your information.

- IEEE Operations Centre: www.ieee.org
- IEEE Regional Activities: www.ieee.org/ra
- Region 10: www.ewh.ieee.org/reg/10
- IEEE Senior Member upgrade: www.ieee.org/organizations/rab/md/smprogram.html
- Region 10 Student Branch activities: www.cairo.utm.my/ieee/r10student.htm
- IEEE Contract administration: www.ieee.org/contractsonline
- Volunteer travel accident/medical plan. This is available to all IEEE volunteers and applies outside your normal country of residence. It starts and ends when you leave/arrive in your own country. For details see www.ieee.org/organizations/vols
- IEEE GOLD (Graduates of the last decade) program: www.ieee.org/organizations/rab/gold/programs.html
- Educational activities: www.ieee.org/eab/
- Professional development: www.ieee.org/pdi
- Career resources: www.ieee.org/eab/education.htm
- IEEE Award programs: www.ieee.org/about/awards, www.ieee.org/organizations/rab/rab/Awards/rabawards.htm
- Conferences: www.ieee.org/conferencesearch/

11. HELP US KEEP IN TOUCH WITH YOU

Are you successfully receiving email from IEEE and from the NSW Section of IEEE?

Most of the communication between the NSW Section, NSW Society Chapters and members now occurs by email or via the web site.

Notifications of social and networking functions, technical meetings, notification of new issues of *Circuit* and other IEEE electronic publications all come to you via the Internet.

address (<http://ewh.ieee.org/r10/nsw>) in your bookmarks so as to keep up to date with the latest Section news and information.

Click on 'News' for updates to the lecture programs on the NSW Section web site. Electronic copies of this and past issues of *Circuit* can also be downloaded from the website.

9. WANTED – STUDENT COUNSELLORS

The Section is calling for volunteers to be Campus Counsellors to support the work of the Student Branches at the University of Sydney, University of New South Wales, University of Technology Sydney, University of Western Sydney and Wollongong University. This role involves encouraging student members and promoting the IEEE among students at the university. If you can help, please contact Stephanie Boyd, Student Activities Chairman, on (02) 9410 1995 or email stef@isb.net.au.

If your email address changes, please let us know. The simplest way to do this is to go to the membership update area of the IEEE web site at (<http://www.ieee.org>) then click on "Membership".

IEEE also provide a valuable way for you to keep the same email for those people and organizations you want to stay in touch with, even after your job or service provider changes. Register for a personal email alias name@ieee.org. If you then insert this alias at the member update area you will overcome the need to notify the IEEE if your email changes. The

IEEE alias service is FREE and also provides Virus Scanning. To obtain an email alias go to the IEEE website (<http://www.ieee.org>), click on "Membership" in the menu to the left. Next click on "Update your IEEE Email alias" and follow the directions from there.

Please advise the Membership Officer, Bruce Poon, email adsphere@mpx.com.au or ph. 9831 8412, if your email address is up to date with IEEE but you are not receiving emails from the NSW Section or NSW Chapters.

12. BECOME AN IEEE SENIOR MEMBER

Many members may not be aware of the benefits of IEEE Senior Membership. As well as recognizing your performance and contribution to

the profession in a tangible way, each new Senior Member receives an attractive fine wood and bronze engraved Senior Member plaque and a US\$25.00 gift certificate towards one new Society membership. Who can become a Senior Member? Anyone with ten years in the profession (not ten years of IEEE membership.) Your educational experience is counted towards this ten-year requirement. You need five years of significant performance and three IEEE Senior Member or Fellow references. If you are nominated, only two references are needed. Now it is even easier to become a Senior Member via the IEEE website. Details and application forms are obtained at www.ieee.org/organizations/rab/md/smprogram.html.

13. JOINT TECHNICAL MEETINGS FOR 2003

All members are invited to attend the listed joint meetings with the I.E. Aust., ITEES and IEE. All meetings are held at 5.30 for 6.00 pm (with light refreshments) at the Institution of Engineers, Australia Lecture Theatre, Eagle House, 118 Alfred St, MILSONS POINT, unless otherwise shown.

Date	Topic	Speaker	Sponsor
26 June 2003	Transformers for the modern world	Colin James, ALSTOM	IEAust.
10 July 2003	Update on Bluetooth	TBA	ITEE
24 July 2003	Truscan-a scanning probe for cancer in women	Polartechnics	IEE
14 Aug. 2003	Electromagnetic engineering in the world of photonic crystals	Drs Andrew Weily & Karu Esselle, Macq. Uni.	IEEE
28 Aug. 2003	Intelligent networked home	Dr Peter Beadle, Motorola	IEEE
11 Sept. 2003	Electronics in the medical industry	Siemens or GE	IEE
25 Sept. 2003	Process control systems in the printing industry	Fairfax	IEE
9 Oct. 2003	Protection against terrorism	Eric Parker	ITEE
23 Oct. 2003	Space time signal processing	Dr Petrag Rapajic, UNSW	IEEE
13 Nov. 2003	Update on contestability of LV power distribution	TBA	IEAust.
27 Nov. 2003	Broadband optical fibre sources	Assoc. Prof. Graham Town, Macq. Uni.	IEEE
28 Nov. 2003	IEEE Annual General Meeting		IEEE

14. DETAILS OF UPCOMING JOINT TECHNICAL MEETINGS

TRANSFORMERS FOR THE MODERN WORLD Thursday, 26 June 2003

Speaker: John Brander, ALSTOM Transformers

Synopsis: Alstom Transformers has been manufacturing transformers at its Rocklea factory in Queensland for 50 years. The dynamic changes that have occurred in infrastructure and technology

in Australia, and the world, require a similar dynamic business view to survive.

The Rocklea factory, over the past ten years, has not only survived in this climate but has increased sales in both Australia and overseas and attracted significant investment from its corporate parent.

This talk will discuss the changes undertaken by this factory to survive in the 'Modern World'.

Biography: John Brander is General Manager – Customer Service ALSTOM Transformers.

Following trade and engineering studies, from 1969 John spent five years at Swanbank Power Station on control and power systems, four years with the Queensland Electricity Commission on finance and system planning – then, in 1982 with the Powerlink workshops, managing control panel manufacture and transformer repair. In 1994, John joined ALSTOM at Rocklea, Queensland, on transformer erection, repair and rewinds.

ELECTRICAL ENGINEERING IN THE WORLD OF PHOTONIC CRYSTALS

Thursday, 14 August 2003

Speakers: Dr Andrew Weily and Associate Professor Karu Esselle, Department of Electronics, Macquarie University

Synopsis: Photonic crystals have created new possibilities for controlling and manipulating the flow of electromagnetic fields. Based on the pioneering work of Eli Yablonovitch and Sajeev John, photonic crystals are formed by creating a dielectric structure that is periodic in one or more orthogonal directions. Photonic crystals may be engineered to give a range of frequencies where propagating modes will be either partially or fully suppressed, known as the photonic band gap (PBG). Defects in photonic crystals can localise the electromagnetic fields and may be used to create waveguides with right angle bends, beam splitters, high quality lasers, couplers, waveguide crossings, channel add-drop filters, (de)-multiplexers, and antennas. These devices are extremely useful for processing electromagnetic signals in communication systems. In materials that exhibit a complete PBG, there will also be complete inhibition of spontaneous emission of light from atoms and molecules. Many of the electronic properties of semiconductors, such as band gaps and localized defect modes, also apply to photons in photonic crystals. We will present some background on the field of photonic crystals, highlight recent developments, and describe some of our research work.

Biography: Associate Professor Karu Esselle gained a PhD Ottawa, MSc Ottawa, BScEng Moratuwa, SMIEEE, MIEAust. He is currently Director and Chair of Postgraduate Research, Division of ICS and Director of the Centre for Electromagnetic and Antenna Engineering.

In 1992, he joined the Macquarie University Electronics Department where he is an Associate Professor at present. He is also the Director of Postgraduate Research in the Division of Information and Communication Sciences, which consist of four Departments. He pursues research in the areas of Antenna Design and Development, Electromagnetic Band Gap (EBG) Structures/ photonic Crystals, Theoretical Methods in Electromagnetics and Microwave Engineering.

Associate Professor Esselle has published over 80 papers including invited chapters in two books. His research programs have been funded by the Australian Research Council and other funding bodies. He has a number of industry clients and collaborates with several prestigious research groups in Australia and overseas. He serves as a Research Grant Assessor to several organizations including the Australian Research Council and Hong-Kong University Grants Commission. He is also a regular referee for international journals.

He is the Chair of Educational Activities of the IEEE NSW Section and the main faculty coordinator of the IEEE Branch at Macquarie University. He was the Director of Research of the Electronics department from 1998 to 2002, and the Chair of the IEEE New South Wales Microwave Theory and Techniques/Antennas and Propagation Joint Chapter from 1999 to 2002. He was the Publicity Chair of the 2000 Asia-Pacific Microwave Conference (APMC). He has also served on Technical Program Committees or International Advisory Committees for conferences such as the APMC and AMEREM. He is a Senior Member of IEEE, and an URSI Radioscientist.

Andrew R. Weily received the B.E. degree from the University of New South Wales in 1995, and the Ph.D. degree from the University of Technology Sydney in 2001. He is currently a postdoctoral research fellow at Macquarie University investigating photonic crystal signal processing and antenna technologies.

THE INTELLIGENT NETWORKED HOME – FACT OR FICTION

Thursday, 28 August 2003

Speaker: Dr Peter Beadle, Motorola Labs Australian Research Centre

Synopsis: Recent science fiction has portrayed the intelligent home as a desirable and almost achievable goal. Bicentennial Man, Minority Report, A.I. and their contemporaries have shown a home with networked gadgets, always-on networking, intelligent speech-based natural language interfaces and robots and virtual realities to satisfy your every desire. This talk will discuss the current "state of the art" in intelligent networked homes and look at the steps needed between today and the domestic heaven portrayed in science fiction. In particular, we will look at:

- intelligent networked home architectures;
- home wireless local area networks, propagation and service quality;
- machine learning for home automation;
- embedded processing and networking for simple devices;
- user interaction hurdles for a real intelligent networked home; and
- OSGi, programming models and the move of open-source software into home automation.

Biography: Dr Peter Beadle is Director of the Motorola Labs, Australian Research Centre. He received his Ph.D. from the University of Sydney in 1989 with a thesis on VLSI Design Syntheses. At the same time, he worked in the Integrated Systems Lab at ETH in Zürich Switzerland on a VLSI Design Syntheses project with AT&T Bell Labs. After receiving his Ph.D., he worked for the Overseas Telecommunication Corporation (OTC) R&D Laboratory and became Section Head. His Section investigated, prototyped and demonstrated broadband multimedia telecommunications systems based on ATM networking. During this time, Peter initiated Australian forums on multimedia communications. Later, Peter joined the Electrical, Computer and Telecommunications Engineering Department, Wollongong University, concentrating on Telecommunications Engineering. He was also responsible for network design and computer systems administration. Peter was elected to Academic Senate and the board of the Wollongong Science Centre. He later became Deputy Research Director of the Telecommunications and Information Technology Research Institute (TITR) and Director for Software and Services Research. Peter is the author or co-author of over 60 refereed technical papers and has served on the program committees of numerous national and international conferences. He joined the Motorola Australian Research Centre (MARC) in June 1998 and was appointed Director in December 1998. He holds a visiting Professorial appointment with Wollongong University, has been a member of the Australian Research Council Expert Advisory Panel on Mathematics and Information Technology and was appointed to Motorola's Science Advisory Board Associates in 2001.

BROADBAND OPTICAL FIBRE SYSTEMS Thursday, 27 November 2003

Speaker: Associate Professor Graham Town, Department of Electronics, Macquarie University

Synopsis: Optical signals are theoretically capable of carrying information with terahertz bandwidths with quantum-limited noise. Development of robust and affordable subsystems for the generation, transmission, signal processing, and detection of broadband optical information involves a number of challenges which, if solvable, allow optical and photonic systems to provide significant advantages over purely electronic systems in a variety of applications.

In this presentation, Dr Town will review recent and ongoing developments in the field of broadband guided-wave optics, particularly optical sources and novel waveguides, and waveguide devices for transmission and signal processing of optical signals with large optical

bandwidths. The presentation will include both theoretical and experimental results generated in the course of research by Dr Town and his students on topics such as soliton lasers, multiwavelength lasers, optical supercontinuum generation, ultrafast all-optical switching, and coupled-mode filter design for broadband signal processing. A particular focus will be placed on the unique properties and applications of microstructured or "holey" optical fibres in applications such as telecommunications and optical tomography.

Biography: Dr Graham Town is an Associate Professor in the Department of Electronics at Macquarie University, where his research interests are primarily in the area of broadband guided-wave linear and nonlinear optics, with applications in telecommunications and biomedical engineering. He was previously with the Department of Electrical Engineering at Sydney University where he worked on optical fibre devices and systems, and had been part of a team, which built a small nuclear magnetic resonance imaging system. Prior to that he was employed in the Australian electronics and telecommunications industry.

OTHER LISTED MEETINGS

No details of the other listed meetings have been provided at the time of printing this newsletter. Please visit the 'News' page of the Section web site for details in the weeks preceding the meeting.

15. IEEE SPONSORED CONFERENCES

Details of conferences and other forthcoming international events can be found by visiting the IEEE web site www.ieee.org/conferencesearch/.

New to the IEEE homepage, <http://www.ieee.org>, is a listing of four upcoming IEEE sponsored conferences, offering to web site visitors a broad exposure to the diversity of the annual IEEE conference program. The four highlighted conferences are extracted automatically from the ConferenceSearch Database, on a nightly basis. Each of the conference listings includes the conference date, as well as a link to its record within the IEEE ConferenceSearch Database for those seeking detailed information. Planned for future revisions of this homepage feature are companion web pages showing expanded listings of upcoming IEEE sponsored conferences.

16. ENGINEERING WEEK 2003 28 JUNE TO 6 JULY

The NSW Section is represented on the Organizing Committee of Engineering Week

2003, which is directed by Engineers Australia, Sydney Division. This event is held annually, and aims to promote the engineering profession.

The Organizing Committee has compiled a program for the nine days to show to the general public some of the work of the profession.

The program includes the following:

28 June - NSW Rostrum Voice of Youth Competition
28 June - Sydney Birthplace Walk
29 June - Harrick's Address [Official Opening at the Power House Museum]
30 June - RTA Crashlab Tour
1 July - "Shaking a Skyscraper" at the University of Sydney
2 July - Forum at the Museum of Contemporary Art. Topic: "It's Time To Decide What We Want From Our Harbour". Speakers: Ian Kiernan and Wayne Johnston
3 July - Port Kembla Port Authority Tour
4 July - Light Rail Facility Tour
4 July - Trivia Night [Social Function at Paddington RSL Club]
5 July - Sydney Harbour Bridge Deck Walk
5 July - Lyell Dam and Mt Piper Power Station Tour
6 July - Sydney Harbour Foreshore Industrial Heritage Ferry Tour

The Harrick's Address, to be held at the Power House Museum on Sunday, 29 June, marks the official opening of *Engineering Week 2003*, and will be given this year by an IEEE NSW Section Committee Member, Associate Professor Sam Reisenfeld, Faculty of Engineering, UTS. The topic will be "Experimental Radio Communications with the Australian FedSat Satellite".

A trivia night will be held on Friday, 4 July, at the Paddington RSL Club. This is a social event, with tables being available in groups of ten people with a charge of \$10 per person. All proceeds will be donated to charity. This event is an excellent opportunity for engineers, and their partners, from all areas of the profession to meet in a convivial environment and test their general knowledge.

For further information and bookings, please contact the booking line on (02) 8923 7111. This line will be available from 16 June, Monday to Friday from 10 am to 4 pm. Meeting places for the tours, and times for all events, will be advised at the time of booking.

17. POWER ENGINEERING CHAPTER ACTIVITIES

Workshop on 'Experience with Cogeneration (CHP)'

In conjunction with the IEE and IEAust, a half-day workshop is to be conducted where a number of speakers from the Sydney metropolitan region

with experience in the operation of Cogeneration equipment based on combined heat power (CHP) will address some of the operational aspects of their equipment.

Date: Thursday, 7 August 2003
Time: 2.00 pm
Venue: IE Aust Auditorium
118 Alfred Street, Milsons Point
Cost: \$55 incl. GST
Bookings can be made with the IEAust Sydney Office (ph. 8923 7100).

For further details please contact the Chapter Chair, Graeme Gwilliam (ph 9587 5340, email gbgbill@theplanet.net.au).

18. SOLID STATE CIRCUITS/CIRCUITS AND SYSTEMS CHAPTER ACTIVITIES

The speaker at the next meeting of the Joint CAS/SSC Chapter will be Dr Mike Stuber of Peregrine Semiconductor.

Date: Wednesday, 25 June 2003
Time: 6:00-9:00pm
Venue: Cisco Systems, Level 2,
3 Innovation Road, North Ryde

NSW

Agenda

- 1) Talk by Dr Mike Stuber, Peregrine Semiconductor. Mike will discuss Peregrine's Silicon on Sapphire process, covering the technology, modelling, integration and optics.
- 2) Refreshments and networking.

For further details please contact the Chapter Chair, Steven Duvall (ph 9937 5861, email steven.g.duvall@intel.com).

19. COMPUTER CHAPTER NEWS

We had a fascinating talk as part of the joint lecture program on 27 March 2003. Dr David Taubman from UNSW spoke about the new JPEG 2000 image compression standard which he helped to develop. David demonstrated some impressive software and showed us how the new standard will let us handle extremely large images, even over the Internet. Early applications include medical imaging and geographic information systems.

We are hoping to have a couple of IEEE distinguished lecturers visit Sydney in the second half of the year. Please watch your email for further information. Professor Sankar K. Pal, Distinguished Scientist at the Indian Statistical Institute, will be in Sydney towards the end of

July. We may be able to ask him to speak on Pattern Recognition and Data Mining.

I recently met Max Burnet. For those without long memories, Max was an electronics specialist who rose to managing director of Digital Equipment Corp between 1975 and 1982. One of Max's current enthusiasms is the Australian Computer Museum Society, and his own collection of pioneering computer equipment. See www.acms.org.au. In the course of conversation he mentioned that the collection is likely to lose its current warehouse space. Does any IEEE member know of a good cheap warehouse available for a good cause?

Please contact me, Stephanie Boyd, Chapter Chairman, on stef@isb.net.au or (02) 9410 1995. I am particularly interested in ideas for chapter activities, and in anybody who wants to volunteer to give a talk.

Stephanie Boyd

20. NEW TRIPARTITE AGREEMENT FOR IEEE, IE AUST AND IEE

IEEE President Adler has signed the new tripartite agreement with the Institution of Engineers, Australia and the Institution of Electrical Engineers (UK).

21. MEMBER PROFILE – WALTER LACHS

Walter Lachs is Chair of the Section's Fellow Search Committee. Since joining the Committee in 1982, he has held the positions of Secretary, Vice-Chairman and Chairman on two and three occasions, and served as Editor of *Circuit* between 1985 and 2001 as well as being Chairman of the Australia Council.



During a 35-year career in the Electricity Power Industry he held engineering positions in the

Snowy Mountains Hydro-Electric Authority and the Electricity Commission of New South Wales (which was split-up after he left). He is presently following up his post-graduate research on the "Automatic Control of Power System Emergencies" an area he had undertaken for his PhD after leaving the Electricity Commission. Following the 1978 French power system collapse, post-mortem studies by their engineers verified the processes leading to system voltage instability that had been described in Dr Lach's papers to IEEE Power Meetings in New York. In spite of this better understanding, system voltage instability still causes the collapse of interconnected power systems throughout the world because adequate automatic countermeasures have not yet been devised.

Dr. Lachs has prepared over 80 technical papers and he has been invited to participate on a number of IEEE and CIGRE Task Forces. As a consequence of his research, he has been invited to give presentations on his work to major electricity utilities in the U.K., France, Canada and the United States as well as overseas and Australian universities. IEEE has recognized his work by electing him as a Fellow in 1994.

22 CENTENARY MEDALS

Dr Trevor Bird, Editor of *Circuit*, and Professor Tony Karbowski, both Fellows of IEEE, were recently awarded Centenary Medals. These medals were presented to over 15,000 Australians for various contributions to Australian society and the community to celebrate 100 years of Federation. Tony and Trevor received their medals for service to society in telecommunications.

23. HOME SWEET HOME - AIEE, IRE, AND IEEE HEADQUARTERS AND FACILITIES

(This is an edited article from IEEE Power & Energy Magazine, Jan/Feb. 2003, pp.76-77)

As IEEE members, we are somehow aware that somewhere, someplace there are IEEE employees who serve our needs. This article is an attempt to explain the somewheres and someplaces that have housed these generations of employees through the many years of IEEE and our predecessor organizations' history.

In the Beginning

At the 1902 American Institute of Electrical Engineers (AIEE) annual dinner, Andrew Carnegie was the featured speaker. Charles F.

Scott, the AIEE President at the time, broached the subject of the need for a single building to house the engineering societies and bring about greater professional unity in the engineering profession. To his great surprise, the next day Carnegie invited Scott and others to call on him. He requested to see the plans for this building, which were nonexistent. The following week this group returned with ideas somewhat solidified, and Carnegie suggested a donation by him of \$1,000,000 "more or less". In 1904, the "more" became an additional \$500,000, which Carnegie provided to complete the building.

A site was chosen at 33 West 39th Street in New York, and plans were made to accommodate American Society of Civil Engineers (ASCE), American Institute of Mining and Metallurgy Engineers (AIME), American Society of Mechanical Engineers (ASME), and the AIEE in a 13-storey building. These organizations were to become known as the "Founder Societies", the first societies in the engineering field in the United States. It was to this group that Carnegie made his gift. To complete the field, the American Institute of Chemical Engineers (AIChE) was grandfathered into the "Founder Societies" upon its formation somewhat later in time and technology.

ASCE soon asked to drop out of the project. The society at that time occupied an adequate building of its own, and many of its members felt that, if unity was desired, it should occur within the ASCE. AIEE President Scott, by inviting several smaller societies to join, managed to show sufficient unity to maintain Carnegie's interest in the completion of the project. The building was dedicated in April 1907, and it served until the move to a new engineering societies' building at 345 East 47th Street in 1961. In 1917 though, the civil engineers recanted and decided to come into the building, paying \$250,000 to finance the erection of two additional floors for their use.

Merger of AIEE and IRE

At the time that AIEE and the Institute of Radio Engineers (IRE) merged and IEEE was born in 1963, AIEE was headquartered in the 47th Street building and IRE had a rather substantial investment in several buildings at 79th Street and Fifth Avenue, a collection of former mansions that were beautiful in both architecture and furnishings and to which the former IRE staff had developed a strong attachment.

In 1964, a buyer was found for the IRE properties at what was considered a fair price. The sale was made, and the staff was transferred to 47th Street. Time and air conditioning took care of the nostalgia and the staffs were integrated.

Today

The steady growth of membership and the consequent requirements for increased staff put a strain on the space available to IEEE at the 47th Street Engineering Center. After expansion to two additional floors, IEEE began to study the feasibility of building a service center in Piscataway, New Jersey. Land was acquired, and the center was constructed and occupied in the mid-1970s. As time passed, further expansion occurred at the Piscataway site; a second building was added in 1988 and a third in 1993. Today, the Piscataway site, renamed the IEEE Operations Center, houses a staff of some 700 people, including the PES Executive Office staff, and is bursting at the seams.

The New York East 47th Street property remained the home to a very small IEEE cadre, primarily *IEEE Spectrum* editorial staff, and, because IEEE is a corporation licensed in New York, it remained as the corporate headquarters site. In the mid-1990s, ASCE moved its operations to the Washington area and, with the absence of one of the "Founder Societies" coupled with the physical deterioration of the structure itself, the decision was made to sell the building. The site is now home to the latest addition to Donald Trump's edifice complex, a 90 plus storey building that obliterates the view of many of its neighbours.

ASME and the small IEEE cadre that remained in New York are now tenants at 3 Park Avenue, which is the official corporate address of IEEE.

24. SECTIONS CONGRESS 2002 REPORT AVAILABLE ONLINE

The final report from Sections Congress 2002 is now available at <http://www.ieee.org/sc>. To view the document, click on "2002" and then "Final Report" in the left menu bar.

25. NEW IEEE FELLOW NOMINATION PROCESS

The IEEE Fellow Committee has announced the launch of a new process that will allow IEEE Fellow Nominators, References and Endorsers to submit nomination material electronically. Please visit the IEEE Fellow Web Site to access the system www.ieee.org/fellows. From the IEEE Fellow Home Page, click "call for nominations" and follow the instructions. If you have questions or comments, please send to fellows@ieee.org.

26. WHAT'S NEW @ IEEE?

What's New @ IEEE is a series of monthly, opt-in email updates designed to provide you with the latest news regarding IEEE activities, industry trends, career development tips, and new IEEE product releases. It is intended for the interest of IEEE members and customers and may be shared with other parties. The newsletter, in its entirety or in part, may be reproduced with proper credit given to its source, What's New @ IEEE. For more information and a look at the archives, go to <http://whatsnew.ieee.org/>.

27. WE NEED YOUR HELP!

The NSW Section has been working towards assembling a data base of information to assist senior secondary students and new university students explore the electrical engineering profession (and related computer science and IT areas), to find out what is involved and where a career might lead, to find out how to get into the relevant areas and to provide pointers to State

institutions at which they might study. We also wish to promote the role of the IEEE and how it can benefit students. We received a grant from IEEE Region 10 to do this, and have matched it with our own funds. We believe that this will enable us to:

- identify reliable web links (or other sources) that provide the relevant information;
- assemble the links into a themed, web page format, resource; and
- supply the information on CD-ROM as well as via our web site.

The aim is to have some CD-ROMs available at the end of the year for a trial distribution.

We need someone who can commit time to undertake this project. Part of the money assigned can be paid as an honorarium. The job might suit a student or young engineer with an interest in promotion of the profession. If you are interested, then please contact Andrew Parfitt (9372 4187, Andrew.Parfitt@csiro.au) as soon as possible. A full briefing will be provided.

28. IF YOU WANT TO CONTINUE TO RECEIVE *Circuit* BY MAIL PLEASE COMPLETE THIS FORM

Except for the July issue, *Circuit* will normally be provided electronically by downloading from the NSW Section Web site <http://ewh.ieee.org/r10/nsw>. Members will be notified by email using the address provided at the membership renewal time when a new issue has been posted on the web site.

Circuit will be mailed only to those members requesting a printed copy or those not having an email address.

If you require a hard copy of *Circuit* mailed to you, please complete the form below and return to the Editor at the address shown.

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ADVERTISING PAYS!

29. NEW SOUTH WALES SECTION COMMITTEE NOMINATION FOR 2004

The Nominations Committee invites members to submit nominations for appointment to the 2004 Section Committee. Already the following Section Committee nominations have been received: F. Barker, T. Bird, I. Boyd, S. Boyd, D. Burger, O. D'Souza, S. Duvall, K. Esselle, G. Gwilliam, W. Lachs, D. Logothetis, P. Ogunbona, A. Parfitt, B. Poon, S. Reisenfeld, J. Robinson, D. Tien, J. Vasseleu and R. Zakarevicius.

Members are invited to nominate on the form below. All nominations for Section Committee members will be considered at the Annual General Meeting, to be held on 28 November, at which all 2004 Office holders and Committee Members will be confirmed. Please note that Chapter Chairs are ex-officio members of the Section Committee. Elections for Chapter committees take place prior to the AGM.

Please Detach-----
-

2004 COMMITTEE NOMINATION FORM

Name:.....Signature:.....

Address:.....Postcode:.....

Tel: (H)..... (W).....
FAX.....

email.....

MEMBER GRADE:..... MEMBERSHIP
NUMBER:.....

Post return not later than 5 September 2003 to:

David Burger [Tel: 8266 1371, Fax 8266 3388]
IEEE Committee C/- PROFESSIONAL CENTRE OF AUSTRALIA
Private Bag No. 1
DARLINGHURST NSW 2010.