



The IFMBE and a Europe in transition

Over the past year we have all been privileged to observe a Europe in transition. This is true in Western Europe where the European Community moves towards 1992 (actually the 'magic' date is the 1st January 1993) when the member countries will become a single market and borders/barriers will 'disappear'. In Eastern Europe the changes have been even more dramatic, symbolised by the Berlin Wall crumbling, but with changes taking place rapidly in virtually all countries. In some of these the courses seem irreversible, and yet in others the balance between the competing 'forces' seems to be quite precarious.

During the first half of 1990 I made three separate trips to Europe, visiting six of our member countries and in addition the USSR. What I found only reinforced impressions that I had received through the media. This is that there are major changes taking place and these changes will have important implications for biomedical engineering and for the IFMBE.

My most recent visit was to the USSR, the German Democratic Republic, Czechoslovakia and Poland. In the USSR, I was in Moscow, where I was hosted by the Institute of Transplantology & Artificial Organs. The purpose of my trip was to explore the possibility of the USSR joining the IFMBE, and in this regard I met with individuals from several different institutes as well as from the State Committee for Science & Technology. Although I hope that the USSR will choose to join the IFMBE, I do not believe that this will happen quickly as there are many decisions that they will need to make prior to any decision to join.

As a tourist I found the changes taking place fascinating. One can walk down Arbat street and on one corner see Gorbachev dolls being sold, while on another corner a sidewalk comedian is doing 'a takeoff' of a Russian politician. What

is clear is that there are mixed feelings about the current situation, and one has the feeling that there is the potential of enormous instability.

From Moscow my wife and I flew to East Berlin, and from there travelled by train to Weimar where we participated in the International Workshop on Clinical Engineering. The German Democratic Republic has a rich history of contributions to biomedical engineering and of participation in the IFMBE. They hosted our International Conference in 1973 and of course the clinical engineering workshop in which I participated.

The workshop was extremely successful, and Diethart Kraft and his colleagues deserve congratulations from all of us for staging a very successful conference. Politically, the two Germanies are moving toward unification, and it is even possible that our two societies representing the Federal Republic of Germany and the German Democratic Republic will soon merge into one. Next year they will hold a joint meeting in Berlin and perhaps that meeting will lead to a single society for all biomedical engineering in Germany.

In regard to the changes taking place in Germany, as positive as they appear to someone like myself, the transition will not be without pain. In speaking with one friend in Weimar, I asked about his feelings relative to the difficult times through which the country will certainly need to go. His answer was simple and to the point: 'I feel fine. I finally have a future!'

From Weimar, my wife and I travelled to Czechoslovakia and then on to Poland. In Prague we were hosted by Ivan Krekule and our affiliated member society, and I was able to have an excellent meeting with their officers. Czechoslovakia is one of our newest member countries, and it is clear that they want to be an active participant in the IFMBE and to provide leadership to biomedical engineering worldwide.

In Warsaw I was hosted by my friend Maciej Nalecz, who is a member of our IFMBE Administrative Council and Director of the Institute of Biocybernetics & Biomedical Engineering. I was quite impressed with a number of the biomedical engineering activities which I saw in Poland. In fact, in all the countries I visited there were examples of excellent work in biomedical engineering. However, in Czechoslovakia and Poland, just as in Germany, there are difficult times ahead.

Clearly, Europe is not only in transition, but history is in the making. These changes will impact the further development of biomedical engineering in Europe. The IFMBE, with 19 affiliated national societies from Europe—60% of our total membership—has, I believe, a unique role to play. The IFMBE needs to consider ways in which it can assist our European colleagues, particularly in those countries which are undergoing enormous change.

One question then is what kind of Eastern Europe initiative should the IFMBE put forward? Another question is what should be our role in general in Europe, what direction should our activities there take? As an example, within the IFMBE should there be an alliance of our European affiliated national societies, one purpose of which would be to co-ordinate activities within Europe?

On returning to the USA I participated in REHAB-1, the rehabilitation engineering workshop jointly organised by the Economic Commission of Europe, a United Nations agency, and IFMBE. This workshop was hosted by RESNA, co-sponsored by the Alliance for Engineering in Medicine & Biology, and took place in Washington DC, 14th-16th June. This was the first in a series of three workshops, and through the efforts of Øivind

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CELLULAR ENGINEERING

Cellular Engineering Working Group formed

There has been a rapidly growing interest in the 'cellular approach' to the study of medical problems, and this has been evident within many medical subspecialties as well as within the medical sciences. Furthermore, the activities of many biomedical engineers and medical physicists have been concerned with cellular phenomena, for example, as part of investigating the influences of various forms of energy, such as X-ray or ultrasound, on cells, or attempting to use cells or cellular subunits for engineering purposes.

The Administrative Council of the IFMBE, at its meeting in Patras in the summer of 1989, decided that it should formally recognise the importance of these activities and developments by creating a Cellular Engineering Working Group (MBEC News No. 5 Nov. 1989 P.N1). The Administrative Council has invited Prof. Peter Rolfe, Head of the Department of Biomedical Engineering & Medical Physics at the University of Keele, UK, to take on the role as Chairman of this Group.

To develop activities in this subject within the Federation it has been decided to bring the Working Group together during the World Congress on Medical Physics and Biological Engineering to be held in Kyoto, Japan, 7th-12th July 1991. Furthermore, a scientific programme on cellular engineering will be incorporated into the main conference.

There will be opportunities for the presentation of papers and posters as part of the symposium, and abstracts are invited on any of the topics shown or indeed on any other topic of relevance to cellular engineering.

The First European Conference on Biomedical Engineering is to be held under the auspices of the European Commission in Nice, France, on the 17th-20th February 1991. Conference topics include medical imaging, hospital information systems, rehabilitation engineering, biomedical sensors, surgical techniques and implants. The Cellular Engineering Group of the IFMBE has decided to organise a satellite meeting on the 21st February 1991, in Nice. The preliminary programme for this one-day meeting is given on this page, and

one-page abstracts may be submitted on the topics listed.

For further information on the Cellular Engineering Working Group write to: Prof. P. Rolfe, Department of

Biomedical Engineering & Medical Physics, School of Postgraduate Medicine & Biological Sciences, University of Keele, Hospital Centre, Stoke-on-Trent, Staffs ST4 7QB, UK.

Satellite symposium on cellular engineering

**1st European Conference on Biomedical Engineering, Nice, France,
21st February 1991**

Medicine relies increasingly upon cellular and molecular approaches for both basic research and clinical care. Many biomedical engineers are already actively engaged in specialist fields relating to cellular and molecular phenomena, and it is now appropriate, and necessary, to recognise these activities, review achievements to date and plan ahead.

The IFMBE has identified the need for a co-ordinated approach to this important and rapidly emerging subject, and the satellite symposium will provide an ideal opportunity for those already active in the field, as well as those interested in acquiring an awareness of the subject, to share their knowledge and ideas.

The keynote lecture will be 'Opportunities for cellular engineering in biomedical engineering', given by Prof. Pankaj Vadgama of the University of Manchester, UK.

Submissions of abstracts of 200 words on one A4 page by the 1st November 1990, for papers to be presented orally, will be welcome. Anticipated topics include cellular

interfaces for neurological stimulation, molecular sensing: the cellular approach, neural networks, engineering approaches for cellular research, cellular techniques in joint prostheses, cardiovascular devices and cellular interactions, implications of cellular engineering for prosthetics and engineering techniques for cellular handling.

There will be a panel discussion on interdisciplinary needs for the evolution of cellular engineering. Disciplines covered will be cell biology, biophysics, materials science, neurophysiology, electronics, biochemistry etc.

The IFMBE Cellular Engineering Working Group will be meeting during the course of the symposium, to plan a strategy and future events.

Further information may be obtained from the organiser and chairman, Prof. P. Rolfe, Department of Biomedical Engineering & Medical Physics, University of Keele, Hospital Centre, Stoke on Trent, Staffs ST4 7QB, UK; tel. 0782 717079; fax. 0782 747319.

European unity at Interhospital 91

The trade fair Interhospital 91 and its associated meeting, the 16th Hospital Congress, are to be held in Düsseldorf, Federal Republic of Germany, on the 23rd-26th April 1991. The congress theme is 'Hospitals on the way to European unity'.

The range of exhibits at Interhospital 91 comprises all spheres of the hospital: electromedical appliances and systems, technical medical instruments, equipment, systems and apparatus, medical consumer goods, technical laboratory equipment and apparatus, emergency

equipment, furnishings for medical care areas, furnishings for doctors' and staff accommodation, furnishings for offices and archives, organisation, supply and disposal equipment, installations and systems, supply and disposal of consumer goods plus services, specialist literature and media.

For further information contact Düsseldorf Messegesellschaft mbH, NOWEA, Postfach 32 02 03, Stockumer Kirchstrasse 61, D-4000 Düsseldorf 30, Federal Republic of Germany; tel. 0211 45 60-01; fax 0211 45 60-6 680.

EDITORIAL

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Lorentsen and those who worked with him, it was extremely successful. The second workshop in this series will be held next February in Norway and will focus on systems being used to deliver assistive technology to individuals in need.

These workshops are part of a series of activities which the IFMBE has conducted with the ECE over the past ten years. The ECE is in a unique situation, being an organisation which has as one of its purposes to foster an East-West dialogue. With the changes that have been taking place in Europe, it would appear that the ECE has a chance to become much more dynamic, and in this the IFMBE would like to continue to co-operate.

On the scene for the future is the European Conference on Biomedical Engineering, which will be held in Nice, France, on the 17th-20th February 1991. This is being organised by the European Community; however, a number of IFMBE members are playing major roles, with Uwe Faust, the IFMBE treasurer, heading the scientific organising committee.

Neither the IFMBE nor its affiliated member societies are formal

participants in this conference; however, we will be holding a one-day Satellite Symposium on Cellular Engineering on Thursday 21st February 1991. This is being organised by Peter Rolfe from the UK and is the first activity of a new initiative the IFMBE has established to focus attention on engineering applications at the cellular level. In addition to this one-day satellite symposium, the IFMBE also will meet with the presidents and national secretaries of our affiliated member societies. I think the meeting provides a unique opportunity to bring these people together and to assess what our role should be in the rapidly changing scene of Europe.

Also on the horizon for the future is 1992, a year of importance to the European Community, in fact to all of Europe, but also a year in which the IEEE/Engineering in Medicine and Biology Society (EMBS) will hold its annual meeting in Paris. As a result of extensive discussions, arrangements have been proposed for the IFMBE to co-operate in the organisation of this meeting. In June this year at its annual meeting the IFMBE Administrative Council voted to participate in the

organisation of this 1992 Paris meeting, subject to a few details upon which further agreement is necessary. This may represent a first for the IFMBE in co-operating with an organisation such as the IEEE, which though based in the USA is being very expansive in its international outlook.

As your President I have tried to act in the spirit of bringing the worldwide bioengineering community together. It is in this sense that I believe that our co-operating in the organisation of the 1992 IEEE/EMBS Paris meeting represents a positive contribution to the field of biomedical engineering.

One other meeting which is on the horizon is the 1997 World Congress on Medical Physics & Biomedical Engineering. It is the IFMBE general assembly together with IOMP which must decide on the site of the 1997 World Congress, and this will be done in Kyoto in 1991. However, in the light of recent events and the continuing unfolding of changes in both Eastern and Western Europe, a clear preference for 1997 may be that the World Congress be held somewhere on the European continent, a region of the world which has been dominating the news and more than likely will continue to do so over the next few years.

As members of the IFMBE I urge all of you to think about issues related to biomedical engineering in Europe. What kind of initiatives should we be making, either individually or collectively, in order to assist our affiliated member societies in Europe in a period of rapid change? In this what should the role of the IFMBE be as an international, worldwide federation? How do you feel about our co-operating with other international/national societies in the organisation of international conferences? And, finally, should the 1997 conference be in Europe? If you agree, then we need to encourage invitations from our affiliated member societies there. I look forward to hearing from you.



ROBERT M. NEREM

Provisional programme on cellular engineering

World Congress on Medical Physics and Biomedical Engineering, Kyoto, Japan, 7th-12th July 1991

Tutorial lecture

Opportunities for cellular engineering in biomedical engineering

Plenary session

Introduction

Speaker 1 Cardiovascular applications
Speaker 2 Molecular sensing through cellular phenomena

Symposium

Session 1 Cardiovascular prostheses; engineering biointeractions
Session 2 Engineering cellular interfaces for neurological devices
Session 3 Cellular recognition mechanisms for sensing
Session 4 The cellular approach for joint replacement
Posters Any aspect of cellular engineering applied to medical problems

Panel discussion: The needs for a multidisciplinary approach in utilising cellular engineering for medical applications

Kyoto 1991 to be affordable for most



'The frontiers of medicine and health-care—important issues for the next millenium' is the theme of the World Congress on Medical Physics and Biomedical Engineering, the IFMBE/IOMP general gathering held once every three years. The coming congress is being organised by the IFMBE and will be held in Kyoto, Japan, on the 7th-12th July 1991.

The World Congress comprises the 16th International Conference on Medical and Biological Engineering and the 9th International Conference on Medical Physics. The annual meetings of the Japan Society of Medical Electronics & Biological Engineering (the IFMBE-affiliated society in Japan) and the Japanese Association of Medical Physics will be held during the event.

The aims of the congress are not only to discuss advanced technology in medical research and healthcare, but also to talk about transferring the technology to related fields to improve our lives in the future. The scientific sessions will include plenary lectures, symposia, works-in-progress, oral and poster presentation sessions. The congress language will be English.

The topics covered will be

artificial intelligence
artificial organs
atherosclerosis
biological modelling
biomagnetism
biosensors
cardiovascular mechanics
cellular biomechanics
clinical engineering
electrophysiology
gastroenterology
haemodynamics
hyperthermia
magnetic resonance
medical imaging
medical informatics
medical lasers
medical monitoring
medical physics
medical ultrasound
microcirculation
nervous system
nuclear medicine
oriental medicine

radiation therapy-dosimetry
rehabilitation engineering
respiratory mechanics.

A commercial exhibition and social programme will be held.

Papers on any of the topics listed above are being sought. The deadline for submission of abstracts is the 20th December 1990.

The Japan Society of Medical Electronics & Biological Engineering is heavily involved in the organisation of the congress and is one of its sponsors, along with the Science Council of Japan and the Japanese Association of Medical Physics. The congress is held under the auspices of the International Union of Physical & Engineering Sciences in Medicine (IUPESM).

The conference President will be Hiroshi Abe, with Kazuhiko Atsumi and Masao Saito, a former IFMBE President, as Vice-Presidents.

The organisers stress that anyone interested in biomedical engineering, medical physics and related fields of

study is warmly invited to come to 'Kyoto 1991' as the congress is commonly known. To this end they have arranged reasonably priced hotel accommodation, especially for those sharing a room. Prices begin at 7700 yen (£30) per night for a twin room and 4600 yen (£18.50) for a single up to 22 000 yen (£90) for a twin room and 19 000 (£75) for a single at a top hotel. There are also facilities for cheaper lodgings.

Kyoto is one of the ancient capitals of Japan, and preserves much of the traditional Japanese culture. A week after the conference Kyoto hosts the Gion Matsuri festival, with historical floats in a traditional parade.

Further information on all aspects of the congress may be obtained from World Congress on Medical Physics & Biomedical Engineering, c/o Japan Convention Services Inc., Osaka Branch, Sumitomo Seimei Midotsuji Building, 4-14-3, Nishitemma, Kitaku, Osaka 500, Japan; tel. 06-311-2131; fax 06-311-2130; telex 65317 JCSOSAKA.

Kyoto satellite meeting in China



A satellite conference of 'Kyoto 1991' (the World Congress on Medical Physics and Biomedical Engineering) will be held in Xi'an, People's Republic of China, on the 15th-18th July 1991, a week after the main congress.

The theme of the conference is 'Appropriate new technology for developing countries'. Its purpose is to provide a forum for discussion and interchange of information about new technology for developing countries, and to give the participants a sense of the future direction in this field.

As in the Kyoto event, the language will be English and the scientific sessions will include plenary lectures, symposia, workshops, works-in-progress, oral and poster presentation sessions. Contributions are invited, with a deadline of 31st December 1990 for the submission of two-page short papers.

The topics covered will be

artificial organs
automation in medical systems
bioengineering in dentistry
biomaterials
biomechanics
biomedical engineering education
biosensors
clinical engineering
computers in medicine
electromagnetic effects on living beings
hyperthermia
information processing in medicine
lasers and electro-optics in medicine
management and control in medical care
medical imaging and imaging systems
medical instrumentation
monitoring devices
new medical diagnostic and therapeutic devices
new technology in Chinese traditional medicine and oriental medicine
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Forms to send for more information from the organisers on both meetings are on page N8

Human Genome Mapping Organisation has new president

Sir Walter Bodmer, Director of Research of the Imperial Cancer Research Fund, UK, has been elected president of HUGO—the international organisation set up to help co-ordinate human genome research.

Sir Walter took over the post on the 1st January 1990, from the founding president, Dr Victor McKusick, Professor of Medical Genetics at Johns Hopkins Hospital, Baltimore.

Dr Kenichi Matsubara of the Institute for Molecular & Cellular Biology, Osaka University, was re-elected vice-president and the two

new vice-presidents elected were Dr Charles Cantor of the Department of Genetics & Development, Columbia University, New York, and Dr Andre Mirzabekov of the Institute of Molecular Biology, Academy of Sciences, Moscow.

HUGO—the Human Genome Mapping Organisation—has 250 members in 23 countries working together in a worldwide effort to map and sequence the entire human genome, or Handbook of Man, as it is known.

That book contains 3000 million

letters. Once it is complete—and that could be within 15 years—it will be used for reference to help researchers everywhere to investigate which gene is responsible for particular inherited defects and the functions and normal variations of human genes.

Sir Walter believes that the project is the single most important piece of biological research in the world today, and that it is likely to provide the basis for the prevention or treatment of most major chronic human diseases and will stimulate the development of an exciting new biotechnology industry.

He says 'It is vital that HUGO acts to ensure collaboration between scientists in the USA and Europe and throughout the world. We want to see free exchange of information and materials so the project can go ahead as fast and as efficiently as possible and also to avoid wasteful duplication of effort and resources.'

Sir Walter said his first task as president would be to secure a firm administrative and financial base for HUGO to ensure the possibility of maximum international collaboration. This reflects the unanimous view of HUGO's Council that all data would be freely accessible to scientists and not used to secure narrow national interests.

The Council also agreed to set up an internationally funded secretariat with three bases, one each in Europe, North America and the Western Pacific, to promote workshops and training programmes. A working group under the outgoing president Dr McKusick will consider the ethical, legal and social implications of the human genome project.

The total international cost of the project is estimated at £2 billion over 15-20 years.

Sir Walter became ICRF's Research Director in 1979 after nine years as Professor of Genetics at Oxford University. He maintains his own laboratory at the Fund where his special interest is the genetics of bowel cancer.

Further information may be obtained from the Imperial Cancer Research Fund, PO Box 123, Lincoln's Inn Fields, London WC2A 3PX, UK.

All-India biomedical instrumentation

An All-India conference on Bio-medical Instrumentation (BMIC-90) was organised by the Electrical Engineering Department, University of Roorkee, and the Institution of Engineers (India), held at the Uttar Pradesh State Centre at Lucknow on the 23rd-24th February 1990. The conference was attended by delegates from engineering institutions, medical colleges, R & D organisations, the army and industry.

As well as technical paper presentations, deliberations were held on the present state and future trends in biomedical engineering in developing Third World countries. It was felt that well trained biomedical

engineers are desperately needed for proper maintenance, repair and development of biomedical instruments in these countries.

The final recommendations of the conference are being prepared for wide circulation and possible adoption by concerned government agencies and other organisations.

Further details can be obtained from Professor S. C. Saxena, Organising Secretary, BMIC-90, Department of Electrical Engineering, University of Roorkee, Roorkee, Uttar Pradesh 247667, India.

S. C. SAXENA
ROORKEE, INDIA

Kyoto satellite meeting in China *continued from page N4*

noninvasive medical procedures
nuclear medicine
physiological systems and models
rehabilitation engineering and prosthetics
ultrasonics in medicine.

As well as researchers and clinicians, manufacturers are invited to describe and exhibit their equipment.

The conference president will be Prof. Gu Fang Zhou, President of the Chinese Academy of Medical Science and President of the Chinese Biomedical Engineering Society (an IFMBE member society). The Vice-President will be Prof. Jiang Dazhong, Director of the BME Institute at Xi'an

Jiaotong University and Vice President of the Chinese Biomedical Engineering Society.

Xi'an has 6000 years of history and culture, with the famous terracotta soldiers in the Qin emperor's tomb drawing visitors from all over the world each year. Many different schedules for touring other parts of China after the conference can be sent on request.

All papers and questions regarding arrangements should be addressed to Dr Huang Ye-cho, Department of Biomedical Engineering, Xi'an Medical University, Xi'an Shaanxi 710061, People's Republic of China; tel. 86-29-711609-(0) 2264 (H) 2866; fax 86-29-711401; telex 700204 CSXMU.

BOOK REVIEWS

Cognitive science in medicine: biomedical modeling by D. A. Evans and V. L. Patel (Eds.), *MIT Press*, Cambridge, Massachusetts, and London, UK, 1989, pp. 421, hardback £31.50.

This book is based on a workshop held in Montreal in September 1988, involving participants in a research programme concerned with 'Cognitive science in medicine'. This research programme derived from decisions within the USA to 're-assess both content and method of medical education, using experts from the fields of cognitive psychology, education and modelling'. Despite the time that elapsed between the workshop and the publication of the book, the contents of this volume remain up-to-date and relevant.

Cognitive science is an emerging field with core disciplines of cognitive psychology, computer science and theoretical linguistics. This book describes the work of leading groups in the USA and Canada, working within cognitive science and having interests in medical education and medical problem solving.

The preface makes the point that to understand medicine, and to teach medicine, it is necessary to understand first how people who practice medicine actually think about the problems they solve. The ten chapters take the reader towards that objective, and the material is of direct relevance to those in the profession of biomedical engineering who continue to attempt to evolve software and hardware which may be able to assist in clinical diagnostic and therapeutic decisionmaking.

In his introductory chapter, Dr David Evans justifies the bringing together of cognitive science and medicine, as well as the utility of psychological studies for a subject grounded in basic science. The work in this volume attempts to deal with the role and evaluation of knowledge in solving problems, the strategies associated with effective learning, and the communication of information. The subsequent chapter provides an interesting example in which clinical intuition and decision analysis are considered in relation to decisions of third year residents for or against oestrogen replacement therapy.

The role of the basic biomedical sciences in the medical curriculum is considered in a chapter on 'Biomedical knowledge and reasoning' by Patel and colleagues. The differences between science-oriented and clinically oriented approaches are discussed, and empirical studies of causal reasoning with experts, sub-experts and medical students are described.

The student-teacher dialogue and cognitive theory are considered in an interesting chapter, which presents results demonstrating how both students and teachers alternate between 'Aristotelian pattern recognition and Galilean functional analysis' during the process of finding a diagnosis and treatment for the patient. The results are said to be in sharp contrast to the assumptions made in the creation of artificial intelligence (AI) expert systems, which imply pattern matching rather than functional analysis as the dominant strategy to be embodied in the computer program.

The theme of assessing automated systems is, once again, clearly relevant to the field of AI, and is dealt with briefly towards the end of the book. The final chapter deals lucidly with certain aspects of the requirements for models of expertise.

Most biomedical engineers will find vocabulary and terminology with which they are not familiar in this book, but even if specific definitions are not always given meanings are mostly self-evident. While not being essential to the bookshelves of all members of our profession, this book will undoubtedly find a useful place on those concerned with medical expert system development.

PETER ROLFE
KEELE, UK

Nursing and computers: an anthology by V. K. Saba, K. A. Rieder and D. B. Pocklington (Eds.), *Springer-Verlag*, New York, 1989, pp. 345, DM 98.

This book, from the 'Computers and medicine' series edited by Bruce I. Blum, is aimed at members of the nursing profession who are increasingly involved in the development and use of computerised information

systems. The book contains 43 chapters, with subject matter ranging from historical perspectives through to descriptions of current computer systems and predictions of the future. The important professional and organisational interfaces between administration, nursing practice, research and education are addressed.

A quotation from Florence Nightingale, in 1856, reminds us that "uniform and accurate hospital statistics . . . would 'enable the value of particular methods of treatment and of special operations to be brought to statistical proof'". Chapters dealing with nursing information systems, and with administrative applications in subjects such as resource management and community health, show how Nightingale's concepts have lived through to current times.

The four main sections in the book show how computers may enhance nursing practices, and the collection and manipulation of data is of course evident here. Three interesting chapters describe activities in the area of expert systems, and these include examples in both clinical decision support and in managerial decisionmaking. It is worth noting that one of the systems described, the Creighton Online Multiple Modular Expert Systems, is said to have cost approximately ten million dollars to develop.

The sections dealing with nursing research and nursing education describe work in the fields of nursing informatics; technical requirements for computing resources for nursing research; a micro-based computer workshop series for nurses; and computer-assisted instruction.

The content of this book appears to meet the objectives of the editors, in providing a framework for future developments in the field of nursing informatics. The chapters are uniformly well written, and should provide useful material for the nursing profession and indeed for biomedical engineers and computer scientists wishing to familiarise themselves with the clearly important interfaces between their own subspecialties and that of the nursing profession.

PETER ROLFE
KEELE, UK

REHABILITATION

Rehabilitation Engineering Society of North America

RESNA, an interdisciplinary association for the advancement of rehabilitation and assistive technologies, was established in Atlanta, Georgia, USA, in 1979. Its full title is the Rehabilitation Engineering Society of North America. Membership includes rehabilitation professionals, providers and consumers who are dedicated to promoting interaction among these groups so that the benefits of modern

technology will be put to work for disabled persons.

RESNA annual conferences are held at various locations in North America. In 1988 RESNA sponsored an international conference in Montreal, Canada, and will do so again in 1992. In 1989, the annual conference was held in New Orleans, Louisiana, and in 1990 in Washington DC. Regional conferences, designed to provide members with an oppor-

tunity to meet more frequently, are conducted two or three times each year at various locations in the USA.

Other symposia and workshops are held periodically to seek answers to questions critical to the welfare of disabled persons. The proceedings are published, as well as a variety of other pertinent publications that emanate from the work of RESNA committees or from rehabilitation professionals in the USA and from abroad.

The RESNA Special Interest Groups (SIGs) respond to the long-felt need for a communication network within the rehabilitation community to address the diverse needs of consumers, providers and industry. Fourteen SIGs have been established and more will be added as the need and demand arises.

Delivering the benefits of technology to disabled persons requires a systems approach in which the interaction of the components is as critical as the system itself. RESNA has developed strategies to ensure these interactions, and to develop a consensus on such critical matters as definition of needs, funding requirements for R&D, education and training, monitoring legislation, working with industry to ensure high standards and to promote the marketing of new devices, and identifying funding sources for consumers.

This is a tall order, but RESNA members are committed to this task so that every disabled person can enjoy daily living to the fullest extent possible.

RESNA, Suite 700, 1101 Connecticut Avenue NW, Washington, DC 20036, USA; tel. 202/857-1199.

Assistive Technology Sourcebook

RESNA Press has published the *Assistive Technology Sourcebook* primarily in response to a 1988 law passed in the US Congress to improve assistance to the disabled. *Assistive Technology Sourcebook*, edited by Alexandra Enders and Marian Hall, provides 600 pages of practical information for professionals and laypersons alike. It is available from RESNA Press for \$60.

Assistive Technology Sourcebook is divided into four main sections: 'Identifying what is currently available'; 'Resources for matching technology to an individual's needs'; 'Resources for specific areas of technological support'; and 'Ensuring that technology reaches those who can benefit from it'.

Providers as well as users of assistive technology are provided with information that will explain the current state of the art, emerging trends, and how and where to find up-to-date information about programs, devices, resource people, audiovisuals, training and funding. The book is also a document for state agencies as they develop consumer-responsive assistive technology delivery systems under Public Law 100-407—Technology-Related Assistance for Individuals with Disabilities Act 1988.

For those who are intimidated by the prospect of researching this extensive field, whether for themselves or for someone else, this book has it all! It is aimed to be easy to use so that even those with limited knowledge of the subject will quickly acquire a thorough understanding of where to go for information, what questions to ask, and how to apply the knowledge obtained.

For further information contact RESNA, Suite 700, 1101 Connecticut Avenue NW, Washington, DC 20036, USA; tel. 202/857-1199.

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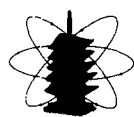
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World Congress on Medical Physics and Biomedical Engineering



Kyoto, Japan, 7th-12th July 1991

Preliminary registration

I plan to participate in the conference:

☐ Yes

☐ No

I intend to submit an abstract:

☐ Yes

☐ No

I will be accompanied by _____ persons

Membership:

☐ IFMBE

☐ IOMP

☐ nonmember

Name

First

Middle

Family

Title

Institution

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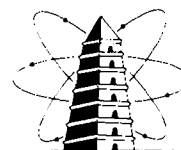
Send form to World Congress on Medical Physics & Biomedical Engineering, c/o Japan Convention Services Inc., Osaka Branch, Sumitomo Seimei Midosuji Building, 4-14-3, Nishitemma, Kita-ku, Osaka 500, Japan.

Please photocopy or cut out and fill in this form, and send it to Dr Huang Ye-cho, Department of Biomedical Engineering, Xi'an Medical University, Xi'an Shaanxi 710061, People's Republic of China.

Xi'an Satellite Conference of 1991 World Congress on Medical Physics and Biomedical Engineering

Xi'an, People's Republic of China, 15th-18th July 1991

Preliminary response



I plan to participate in the conference: Yes_____ No_____

I intend to submit a paper. Please send more information: Yes_____ No_____

I intend to exhibit products during the conference: Yes_____ No_____

I will be accompanied by_____persons

Membership: IFMBE_____ IOMP_____ CSBME_____ nonmember_____

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