“Hearing loss reduces the capacity to communicate, and this in turn impacts on a person’s life chances through the reduced opportunity to equitably participate in education, to gain competitive skills and employment and to participate in relationships. The Listen Hear study reports Hearing loss ranks with asthma, diabetes and musculoskeletal diseases in terms of burden of disability, and should be considered as a national health priority.”

A/Prof Robert Cowan
CONTENTS
Mission and Objectives → 04
Strategic Outcomes → 05
Executive Summary → 06
National Research Priorities → 12
Governance and Management → 13
Research Programs → 20
Commercialisation and Utilisation → 29
Communications → 32
Education and Training → 36
Publications → 39
Glossary of Terms → 42
Financial Report → 43
MISSION AND OBJECTIVES

MISSION – ‘CREATING SOUND VALUE’

The Hearing Cooperative Research Centre (CRC) brings together an internationally unique consortium of research, clinical and industry organisations dedicated to the common purpose of ‘creating sound value’ through research and education – to prevent and better remediate the lost productivity resulting from hearing loss in children and adults.

OBJECTIVES

The Objectives of The HEARing CRC are:

† To enhance Australia’s industrial, commercial and economic growth through a program of sustained, user-driven cooperative research into hearing loss prevention and mitigation;

and

† Through education and commercialisation of research findings, to reduce the incidence of hearing loss and increase the effectiveness with which hearing loss and hearing disorders are treated through improved technology, processes or clinical services.

The consortium will also create opportunities for industry growth in hearing healthcare together with improved clinical tools and procedures to meet projected increases in demand for hearing healthcare.
THE HEARING CRC IS FOCUSED ON THE TWIN CHALLENGES OF MORE EFFECTIVE PREVENTION AND IMPROVED REMEDIATION OF HEARING LOSS.

Hearing loss affects one in six Australians, and its prevalence is age-related, rising from less than 1% for people under 15 years of age to 75% of those over 70. With the ageing of our population, and the rising noise levels in everyday life, this is projected to rise to one in four by 2050. The financial cost of hearing loss to Australia in 2005 was estimated to be $11.75 billion or 1.4% of GDP.1

1 Listen Hear! The Economic Impact and Cost of Hearing Loss in Australia, Access Economics, 2006

OUTCOMES OF THE HEARING CRC

MAXIMISE LIFELONG HEARING RETENTION:
by genetic and pharmacological approaches to identify and ameliorate childhood and acquired (including age-related) hearing loss; application of new sound coding and bioengineering knowledge to the design, capabilities and function of hearing protection, hearing remediation and telecommunication devices; and application of new knowledge to the diagnosis and rehabilitation of tinnitus and central auditory processing disorders.

- Prevalence stabilised

REDUCED PRODUCTIVITY LOSSES FROM HEARING LOSS:
by provision of more effective hearing protection, improved implantable technology and improved hearing aids that people will consistently use; and by providing innovative solutions that increase workforce capacity and effectiveness, helping Australians to age productively.

- Accelerated intervention

IMPROVED TAKE-UP OF TECHNOLOGY:
by helping industry partners to achieve significant economic growth through investigation of barriers to use of hearing protection, and to the uptake of and use of implantable and acoustic prosthetics, thereby resulting in new and expanding markets, industry export and domestic earnings and job growth.

- Increased uptake

EDUCATION AND TRAINING:
by postgraduate and professional education and the development of an expanded network of clinicians, to support effective adoption of innovations, delivery of improved hearing services and encourage greater uptake of commercial products developed by HEARing CRC industry partners.

- Accelerated intervention
EXECUTIVE SUMMARY

As the Members will be aware, there was a significant delay between the incorporation of the HEARing CRC Ltd on 18 January 2007, and the eventual signing of the HEARing CRC Members Agreement and Commonwealth Agreements in December 2007. In part, this was due to the complexity of the incorporated structure required by the Commonwealth, the number of Members involved, and the transitional aspects of moving from the previous Cooperative Research Centre for Cochlear Implant and Hearing Aid Innovation (CRC HEAR) to the new HEARing CRC.

As Chairman, I have had the opportunity to observe the transition to our new governance and management structure, and it is pleasing that the majority of these issues have now been resolved. This will enable the Board and management to focus more on the potential for significant achievements from our new program of activities aimed at both prevention and remediation of hearing loss.

It is pleasing to report that many of the HEARing CRC research projects which were carried over from the previous CRC HEAR have been fully operational during the whole of the financial period, and we are now starting to see achievements in filing of new patents in sound coding, and development of more specific projects aimed at specific needs of our industry and clinical partners. A majority of our new research projects have also commenced, and in particular, our genomics projects have generated significant momentum. It was also very pleasing for our HEARing CRC to have been involved in the launch of the Paediatric MEG facility at Macquarie University, and we look forward to the impact it will have on acoustic and cognitive research studies with children.

It is also pleasing to report a number of commercial successes achieved through HearWorks Pty Ltd. During the past financial year, HearWorks has received significant funds from licensing and other commercial endeavours, and these will be distributed in part to the CRC HEAR Parties holding Project Interests, as well as to the HEARing CRC to further support its activities. On this note, the Board has agreed to recognise a payment of $1.9 million to be received in this financial year from HearWorks as a full payment of its future six years of cash contributions. The HEARing CRC will benefit from having these funds available earlier than would otherwise have been the case.

The HEARing CRC’s management team has slowly been developing, with appointments of a Finance Manager, and Research Program Coordinators at Macquarie University and Australian Hearing, as well as a new Executive Assistant to the CEO and Board. We look forward to the imminent appointments of a Communication and Education Manager, and Commercial Operations Manager, who will greatly strengthen the management team.

Our Board has benefited much from the involvement of the nominee Directors of the Core Members, who have been active not only as Directors of HEARing CRC Ltd, but also as members of the Finance and Audit and Nominations and Appointments Committee, and in some cases as Directors of our commercial arm HearWorks Pty Ltd. In particular, the Directors would like to recognise Ms Anthea Green, who resigned from the Board in September 2008, for her contributions to the governance and success of the HEARing CRC and its predecessor.
We have not progressed as quickly as planned in the recruitment of two additional independent Directors, despite significant effort and detailed discussions with a number of potential candidates. The Board is investigating different approaches to recruitment of additional Directors, who will complement the skills of the existing Board.

The Board has recommended to the Members that a number of amendments to the HEARing CRC Constitution be accepted, to ensure that the HEARing CRC Ltd Constitution is consistent with the terms of the HEARing CRC Members Agreement.

As regards to our corporate structure, we note that the Hearing Education and Research Network of Australia (HearNet) was officially launched as part of the Australian Innovation Festival in May 2008 at the Audiology Australia National Conference in Canberra. HearNet will be an important element in our translation of research outcomes to clinical practice, and an initial task of our Communication and Education Manager will be to establish and develop HearNet.

We also note the special resolution in regard to the HEARing CRC IP Trust, and that the Board has recommended to the Members to revoke HearWorks appointment of Trustee for the IP Trust, and to appoint a newly-created trust company, HearIP to be the trustee. This change in structure is primarily a risk management strategy, and was contemplated at the time of signing of the HEARing CRC Agreements.

As to future developments, the Board has approved the relocation of the HEARing CRC’s headquarters and sound-coding work to be co-located with the University of Melbourne’s Department of Otolaryngology in a new Swanston Street facility. We look forward to new premises in April 2009 and we would express our gratitude to both the Bionic Ear Institute and the University of Melbourne for their provision of research and management space to date. We would also like to acknowledge Cochlear Melbourne, which has generously allowed us to use meeting rooms for Board and Committee activities.

I would also like to take this opportunity to thank all the Directors, past and present, for their many contributions on our journey, especially Mr Barry Roberts who has helped me immeasurably by assuming many of my responsibilities during my current period of temporary incapacity. Our CEO, A/Prof Robert Cowan, has been central to the progress made to date by The Hearing CRC Ltd and its associated entities.

On behalf of the Board, I commend this report to you and extend the Board’s gratitude and congratulations to the HEARing CRC Members, Executive Management Team, staff and students for what has been an exciting and productive journey.

Richard Searby AO QC
Chairman

“In particular, we remain deeply indebted to the many hearing-impaired adults and children and their families who have participated in our research projects. Without their generous cooperation our research would not be possible.”
Although signing of the Commonwealth Agreement was delayed to December 2007, the HEARing CRC was able to commence its research through funding from the Members and from commercial successes of the previous CRC for Cochlear Implant and Hearing Aid Innovation (CRC HEAR).

This capacity enabled the administrators of the Commonwealth CRC Program to endorse the continuation of CRC HEAR for an unfunded eighth year. Without this framework for transition to the HEARing CRC, the effect of delayed documentation would have been more profound.

Between July and December 2007, a significant proportion of research projects were commenced with interim funding provided by Members’ cash contributions and by HearWorks. Two areas that have particularly progressed during this time include intelligent sound coding for hearing aids and cochlear implant and bioengineering projects. These projects aim to develop new electrode arrays that build on the framework of CRC HEAR research and have received strong support from Australian Hearing’s National Acoustic Laboratories (NAL), Siemens Hearing Instruments (and staff of Siemens AG), the University of Melbourne’s Department of Otolaryngology and Cochlear Ltd staff in both Melbourne and Sydney.

Another area that is advancing is a new design of hearing protection headphone which has been prototyped with industry (with support from Acoustics Pty Ltd and Hybrid Electronics). In the coming year, a digital implementation of sound protection algorithms developed from our call centre telephone protection projects at NAL will be applied to this novel technology.

Importantly, research has also commenced in two new initiatives, intelligent hearing protection and biomolecular and genetic approaches to preventing environmental and age-related hearing loss. We are particularly grateful to the Walter and Eliza Hall Institute (WEHI) of Medical Research, the Murdoch Children’s Research Institute and Murigen Therapeutics for their support during this transitional period, which enabled the biomolecular and genetics projects to get underway.

Similarly, the support of Macquarie University, and in particular the Macquarie Centre for Cognitive Sciences, has been important in investing in establishment of the adult and paediatric magnetoencephalographic imaging (MEG) laboratory. This laboratory will prove critical to projects addressing central auditory processing disorders in adults and children, tinnitus and coding of sound for use in hearing aids and cochlear implants. We have benefited enormously from the generosity and expertise of the Kanazawa Institute of Technology and the Yokogawa Electric Corporation of Japan, who are the world leaders in MEG technology.

Sound coding and bioengineering projects have also continued to benefit from our expanded clinical trial network comprising the Royal Victorian Eye & Ear Hospital, the Sydney Cochlear Implant Clinic, and Attune Hearing Pty Ltd in Brisbane, all of whom have contributed patients, facilities and expertise to enable clinical studies to proceed.
The delayed commencement of the HEARing CRC has impacted most on projects in the Clinical Tools and Procedures Program, as many of these were reliant on the recruitment of new staff to lead projects. Clinical work in collaboration with NAL to develop new modules for the HEARLab research platform has progressed well, in particular due to the additional funding provided through the New South Wales Government Office of Medical Science and Research. These funds have also been used to assist in establishing the MEG infrastructure and also in our hearing aid outcomes projects being conducted in collaboration with the University of Sydney’s continuing Blue Mountains Study.

We are hopeful that projects aimed at improved habilitation procedures, automated programming and self-fitting technology for hearing aids and cochlear implants (tele- and web-based service delivery) will build up to full activity during the coming year. Similarly, projects aimed at identifying barriers to hearing protection, hearing aid and cochlear implant use and referral will be fully active in the near future.

To address the impact of delayed establishment, the Board has accepted a proposal to bring forward cash payments from commercial earnings of HearWorks Pty Ltd. Previously planned to be paid over years 2 through 7, these will now be fully paid in year 2, providing significant additional resources to be applied to research project areas that have been delayed.

The HEARing CRC’s Professional Education Program has also continued its previous success, providing training in management of hearing impaired adults and children through use of cochlear implants to visiting surgeons and clinicians from Asia Pacific, South Africa and Europe. However, recruitment of higher degree students has also been impacted by the delayed signing of documentation and resultant delays in establishing our full research program.

We would like to thank all of those who have supported our mission and objectives during this difficult transitional year. In particular, we remain deeply indebted to the many hearing-impaired adults and children and their families who have participated in our research projects. Without their generous cooperation our research would not be possible.

In the coming year, we hope to achieve significant progress in addressing our challenges of effective approaches to prevention and improved remediation of hearing loss for adults and children.

A/Prof Robert Cowan
Chief Executive Officer
MAJOR DEVELOPMENTS DURING THE YEAR

Achievements and activities of the CRC in relation to research, commercialisation/ utilisation and education outcomes for the reporting period.

➢ Progress has been made in identifying potential targets in the mouse model for biomolecular approaches to preventing presbycusic hearing loss.

➢ The adult magnetoencephalographic (MEG) imaging laboratory has been established at Macquarie University’s Centre for Cognitive Science (MACCS), providing infrastructure for sound coding, tinnitus and central auditory processing disorder research projects.

➢ The Mark I prototype of headphone hearing protection incorporating the Muffler™ active noise reduction circuit was produced on schedule with support from Acoustic Pty Ltd, Hybrid Electronics and the Victorian State Government.

➢ A new binaural signal processing scheme has been developed to improve perception in background noise in hearing aids. Patents have been filed.

➢ Two new speech coding strategies aimed at improving recognition of temporal information in speech, and enhancing use of bilateral cochlear implants have been developed. Patents have been filed.

➢ First-time-in-human clinical trials have been successfully undertaken with two new cochlear implant experimental arrays designed to be used with patients having residual acoustic hearing.

➢ Trainable hearing aid technology has been incorporated into a hearing aid commercially released by Siemens AG.

➢ Our research has demonstrated that directional microphones should be used in children of all ages. This data has been presented at major international meetings and is being prepared for submission.

➢ Professional Cochlear Implant Workshops have been extremely well attended by surgeons and clinicians from Asia Pacific, resulting in an increased number being scheduled for the 2008-09 year.

➢ A number of projects aimed at optimising the electro-neural interface in cochlear implants have been planned with the Intelligent Polymer Research Institute at the University of Wollongong and Cochlear.

➢ Application of the trainable hearing aid concept to automated programming of cochlear implants will be commenced in the next year.

Risks, opportunities and responses to the above.

Recruitment of key staff and PhD students in a number of projects has been slower than anticipated. Additional funds are being made available from commercial earnings to bring forward research activities. Hearing CRC scholarships are now being offered to attract PhD applications.

Impediments to achievement of the CRC’s objectives experienced during the year and strategies adopted to address these.

Delays in executing the HEARing CRC Members and Commonwealth Agreements resulted in delays in commencing some projects. The Board has identified projects to which additional resources can be made available to progress research projects more rapidly and potentially make up lost time in achieving milestones. Successful negotiation of commercial licences of IP developed by the CRC HEAR has been critical to providing transitional funds and significant new funds to be paid to the HEARing CRC by HearWorks.
### Awards, special commendations, CRC highlights.

- The New South Wales Government Office of Medical Science and Research has provided significant funding to a number of projects.
- In June 2008, the HEARing CRC, together with Audiology Australia, was successful in being selected to host the World Congress of Audiology in 2014 in Sydney.

### Industry context in which the CRC operates.

HEARing CRC operates in the hearing healthcare industry environment. This involves industry partners involved in:

- Therapeutic approaches to prevention of hearing loss;
- Management of tinnitus;
- Hearing protection technology;
- Acoustic hearing aids; and
- Implantable technology.

The hearing protection market in terms of telecommunications is rapidly evolving and prices have been driven down by market pressure. There remains strong interest in new, more efficient hearing protection algorithms.

Australian company, Sensear Pty Ltd, has released an intelligent hearing protection device into the marketplace. Our view is that the Sensear product is a very high cost solution, and our current research project is aimed at producing a much lower cost solution, aimed at achieving broader market penetration.

A number of amalgamations have occurred in the international hearing aid industry. Siemens remains the leader in worldwide distribution networks, and Siemens AG research staff have strongly supported HEARing CRC projects.

Cochlear Ltd remains the world’s leader in implantable technology, and the HEARing CRC research aims to assist Cochlear through developing improved sound coding and implantable technology. The Hearing CRC also collaborates with Cochlear in the training and establishment of clinics in Asia Pacific through the Cochlear Implant Workshop program and VISTA programs for professionals.

### Major developments or initiatives.

- The successful licensing of CRC HEAR IP will provide significant additional resources to the HEARing CRC much earlier than had been originally anticipated.
- The launch of the Australian Hearing Education and Research network (HEARnet) is a major initiative of the HEARing CRC, which is aimed at enhancing communication with end-users of hearing technology and clinical services.
- The creation of HearIP Pty Ltd and recruitment of a specialist Commercial Operations Manager are aimed at improving commercial and intellectual property management.
- Identification of a new headquarters location, in cooperation with the University of Melbourne Department of Otolaryngology, will address a critical shortage of space in the East Melbourne hearing precinct which has hampered recruitment of management staff.
The HEARing CRC is focused on the twin challenges of more effective prevention and improved remediation of hearing loss. This aim fits well with the National Research Priority ‘Promoting and maintaining good health and preventing disease, particularly among young and older Australians’.

A healthy start to life:
Through research aimed at developing new knowledge of auditory processing, the effects of central auditory processing disorders on young children may be better identified and reduced. In addition, new fitting methods for hearing aids, proof of benefits of directional microphones in children, and new management tools such as the Diary of Early Language (Di-EL™) means that infants detected with a hearing loss at birth or in the first twelve months of life through universal newborn screening programmes can be provided with the best auditory prosthesis at the earliest possible time, significantly enhancing their lifelong prospects.

Ageing well, ageing productively:
Research aimed at more efficient hearing protection, together with initiatives to develop therapeutics to reduce hearing loss (due to environmental noise or early-onset hearing loss) have real potential to enable Australians to age well and productively. The outcomes of this research will enable continued contribution through employment, as well as potentially reducing the number of individuals requiring expensive remediation solutions for acquired hearing loss. In addition, research is aimed at improved hearing aids and cochlear implants (including the use of acoustic and electric hearing in the same ear), investigation of different approaches to fitting of devices and habilitation. Together these approaches will provide improved communication outcomes for children and adults and a range of technology and services to be accessed at different life stages.

Preventive healthcare:
Research to address the reasons why people do not use hearing protection and hearing technology will provide guidance to public campaigns aimed at changing behaviour. Together with the development of new technology to protect workers, specific groups such as call centre staff and young people listening to music and in the social environment, these studies are aimed at reducing the prevalence and degree of acquired hearing loss. In addition, research is investigating the knowledge base of health professionals, and reasons why they may under-refer for hearing technology. Such information will be used in our professional education programs to equip professionals with new knowledge that allows them to better inform and advise their clients. The Hearing Education And Research network (HEARnet) established by the HEARing CRC is intended to be a knowledge transfer vehicle enabling the community to be better informed of the risks of noise-induced hearing loss and of the availability of hearing healthcare advice.

Strengthening Australia’s social and economic fabric:
During 2006-07, CRC HEAR, together with its collaborating partner Vicdeaf, commissioned Access Economics to produce ‘Listen Hear! The economic cost and impact of hearing loss to Australia’, which reported the cost of hearing loss to Australia as $23 billion per annum: $11.75 billion in direct economic costs (57% from lost productivity due to effects of hearing loss on communication) and a further $11.8 billion in lost wellbeing. The HEARing CRC’s efforts in reducing the prevalence of hearing loss and developing improved remediation are directly aimed at improved social interactions for Australians, and economic returns through commercialisation and more cost-effective service provision.

Commercialisation of the HEARing CRC technology has already resulted in export and domestic earnings for our industry partners including Cochlear. It is also creating the potential for new markets for hearing implants and is assisting in development of new user markets in Asia Pacific. The downstream impact on creation and maintaining biomedical research, industry and clinical sector employment in Australia also contributed to strengthening economic returns.
GOVERNANCE AND MANAGEMENT

THE HEARING COOPERATIVE RESEARCH CENTRE IS A MULTIDISCIPLINARY COLLABORATION OF FIVE CORE AND 21 SUPPORTING MEMBERS, EACH OF WHICH CONTRIBUTES SPECIFIC EXPERTISE AND INFRASTRUCTURE TO THE STRATEGIC PROGRAM OF ACTIVITIES.

MEMBERS OF THE HEARING CRC

Core Members

Support Members

There have been no changes to the Members of the HEARing CRC during the 2007-08 year. However, due to the delays in execution of agreements and commencement of some projects, a number of Support Members were not directly involved in projects during the year.

CORPORATE STRUCTURE

HEARING CRC LIMITED (ACN 123 522 725): incorporated in January 2007 as a company limited by guarantee, was established by the Members to manage the Activities of the Hearing Cooperative Research Centre.

HEARWORKS PTY LIMITED (ACN 089 900 676): created by the parties to the previous CRC HEAR as a company limited by shares, HearWorks acts as Trustee for IP and undertakes commercialisation of research outcomes for the CRC HEAR IP Trust and for the new HEARing CRC and its Members.

HEAR IP PTY LIMITED (ACN 134 173 854): incorporated in November 2008 as a trustee company, was created for the purposes of acting as Trustee for intellectual property (IP) created by the HEARing CRC in the future.
GOVERNANCE AND MANAGEMENT (cont.)

THE HEARING CRC - GOVERNANCE AND MANAGEMENT STRUCTURE

GOVERNANCE

Governance of the Hearing CRC Ltd is organised through a Board of Directors, comprised of an Independent Chairman, the Chief Executive Officer, two independent Directors appointed in consultation with the Support Members and one nominee Director appointed from each of the five Core Members (Australian Hearing, Cochlear Ltd, Macquarie University, Siemens Hearing Instruments Australia and The University of Melbourne).

The Board is accountable to the Commonwealth and the Members for the governance, management and control of the business and affairs of the Company. The Board meets quarterly to review strategic goals and objectives and oversee the performance of the activities of the HEARing CRC, including its commercialisation activities as managed through HearWorks. Additional meetings of the Board or committees are held as required.

The Hearing CRC operates under the terms and guiding doctrines of its Constitution, the Members Agreement for the establishment and operation of the Hearing Cooperative Research Centre, and the agreement between the Commonwealth of Australia and the Hearing CRC Ltd (Commonwealth Agreement). The Hearing CRC follows good corporate governance practices as recommended by the Australian Securities and Investments Commission (ASIC).

During 2008-09, the Board plans to recruit two independent Directors to complement the skills and experience of the current Board of Directors. In addition, following approval of amendments to the HEARing CRC Ltd Constitution, the five nominee Directors may appoint Alternates.
To assist in governance, the Board has established two committees:

**FINANCE AND AUDIT COMMITTEE**

The Finance and Audit Committee assists the Board by providing oversight of the financial operations and affairs of the HEARing CRC and HearWorks. This Committee also oversees the relationship with the external auditor, and the process of identification and management of business, commercial and financial risks. For the reporting period this committee met six times and the attendance record is disclosed in the Financial Report (see page 45). It is company practice that the CEO is in attendance for all meetings.

The members of the Finance and Audit Committee during the period were:

Mr Barry Roberts (Chair)
Prof Rob Evans
Ms Anthea Green (resigned September 2008)
Mr Neville Mitchell (appointed November 2008)
Dr Richard Searby (ex officio)

**NOMINATIONS AND APPOINTMENTS COMMITTEE**

The Nominations and Appointments Committee assists the Board in recommendations on the appointment and remuneration of Directors to the Boards of the HEARing CRC and HearWorks. If required this Committee will also assist in the appointment of a Chair or CEO and in recommendations on the remuneration of these officers. For the reporting period this committee met three times and the attendance record is disclosed in the Financial Report (see page 45).

The members of the Nominations and Appointments Committee during the period were:

Ms Anthea Green (Chair) (resigned September 2008)
Ms Kathryn Greiner (appointed November 2008)
Mr Barry Roberts
Dr Richard Searby (ex officio)

**SUPPORT MEMBERS GROUP**

The HEARing CRC comprises five Core Members, each of which has appointed a nominee Director to the Board, and 21 Support Members. The establishment of the Support Members’ Group is intended to provide a forum and opportunity for the Support Members to meet with and discuss progress directly with the Board and Management. It is intended that the Support Members’ Group will meet at least once per year.

**SCIENCE ADVISORY GROUP**

The HEARing CRC intends to establish a Science Advisory Group, which will include key scientists from across the Members, together with independent scientists with expertise in the relevant disciplines of biomedicine, bioengineering and clinical practice. The Science Advisory Group will assist the CEO in the annual Project Review, and in special reviews to be conducted under the CRC Program, as well as being available to advise the Board if appropriate.

**HEARWORKS**

Intellectual property and commercial activities of the HEARing CRC are operationally managed through HearWorks Pty Ltd, a company established by the previous unincorporated CRC HEAR for these purposes. HearWorks continues to act as Trustee and as the licensing/commercial agent of the CRC HEAR IP Trust.

The Directors of HearWorks during the period were:

Dr Richard Searby (Chair)
A/Prof Robert Cowan
Ms Anthea Green (resigned September 2008)
Ms Kathryn Greiner (appointed November 2008)
Mr Barry Roberts

The HearWorks Board meets on a quarterly rota.

**HEAR IP PTY LTD**

It is intended during the next year that a new entity, HEAR IP Pty Ltd, will become the Trustee for the HEARing CRC IP Trust, thereby splitting the roles of IP Trustee and commercial/licensing agent (HearWorks will continue to fulfill the latter role). HEAR IP was incorporated in November 2008.
Dr Searby was appointed as Chairman of the HEARing CRC Ltd in April 2007. He is a leading member of Australia’s legal profession, and has held a wide range of directorships of Australian and international corporations. He has advised the Australian Government on various occasions and has drafted amendments to Australian and Victorian legislation. He was Chancellor of Deakin University from 1997 through 2005. Amongst a long list of corporate activities, he was a Director of News Corporation from 1979-1992 and Chairman from 1981-1991, and a Director of Rio Tinto Ltd from 1977-1997. He was awarded the Order of Australia in 2006 for his services to education, as a contributor to the programs of major cultural institutions, business and the law.

Dr Searby is an ex officio member of the Finance and Audit Committee and Nominations and Appointments Committee.

Prof Rob Evans was appointed as a Director of the HEARing CRC Ltd in April 2007. He is currently Director of the Victoria Research Laboratory of National ICT Australia and a Professorial Fellow in the University of Melbourne. Following postdoctoral studies at MIT in 1978, he became Professor of Computer Engineering at the University of Newcastle. Prof Evans moved to the University of Melbourne in 1992 and at various times has been Dean of Engineering and Director of the Centre for Networked Decision Systems (2000-2004). He has extensive experience in the design and implementation of hardware and software for industrial real-time embedded microprocessor systems and has worked extensively with industry over the past 35 years. He played a major role in the CRC for Sensor Signal and Information Processing. He has over 450 peer-reviewed publications and is a Fellow of the Australian Academy of Science, Australian Academy of Technological Sciences and Engineering, and the Institution of Engineers Australia.

Prof Evans is a member of the Finance and Audit Committee.

A/Prof Cowan was appointed as the inaugural CEO of the HEARing CRC Ltd in January 2007 and Managing Director of HearWorks in 2001. He was CEO of the previous CRC HEAR. A/Prof Cowan is a Principal Research Fellow in the University of Melbourne, has published extensively in the fields of audiology, cochlear implants, sensory device and biomedical management, and holds a number of Australian and international technology patents and trademarks. A/Prof Cowan has extensive experience in the management and commercialisation of research and served as Deputy Chair of the Cooperative Research Centres Association from 2002-2005. A/Prof Cowan was President of Audiology Australia from 1992-1996 and from 1997-2000, and remains a Federal Councillor. In 2004 he was selected as Australian Professional of the Year by Professions Australia, and his contributions to audiology have been recognised through award of Audiology Australia’s President’s Distinguished Service Award (2003) and the Denis Byrne Memorial Lecture award (2006).

A/Prof Cowan was appointed as the inaugural CEO of the HEARing CRC Ltd in January 2007 and Managing Director of HearWorks in 2001. He was CEO of the previous CRC HEAR. A/Prof Cowan is a Principal Research Fellow in the University of Melbourne, has published extensively in the fields of audiology, cochlear implants, sensory device and biomedical management, and holds a number of Australian and international technology patents and trademarks. A/Prof Cowan has extensive experience in the management and commercialisation of research and served as Deputy Chair of the Cooperative Research Centres Association from 2002-2005. A/Prof Cowan was President of Audiology Australia from 1992-1996 and from 1997-2000, and remains a Federal Councillor. In 2004 he was selected as Australian Professional of the Year by Professions Australia, and his contributions to audiology have been recognised through award of Audiology Australia’s President’s Distinguished Service Award (2003) and the Denis Byrne Memorial Lecture award (2006).

Ms Anthea Green was appointed as a Director of the HEARing CRC Ltd in April 2007. She has been Managing Director of Australian Hearing from October 2002 – October 2008. She has worked in the health sector for 20 years at Chief Executive level in public, private and not-for-profit sectors. Previous appointments include: General Manager, Royal Hospital for Women (Sydney); CEO, Victorian Transport Accident Commission Rehabilitation Centre; CEO, Southern Health New Zealand.

Ms Green was Chair of the Nominations and Appointments Committee and a member of the Finance and Audit Committee.

Ms Green resigned from the Board in September 2008.
Ms Kathryn Greiner was appointed as a Director of the HEARing CRC Ltd in November 2008. She has been Chair and Non-Executive Director of Australian Hearing since October 2006. Her professional career has involved administering early childhood services and mental health programs, both in Australia and the United States. She has extensive experience in the development of communities and their services. Ms Greiner has held many corporate and not-for-profit directorships, including the Salvation Army Sydney Shield Appeal, Save the Children Fund, LEK Consulting, International Council of the Asia Society and the Sydney Peace Prize Foundation.

Ms Greiner was appointed to the Nominations and Appointments Committee in November 2008.

Mr Neville Mitchell was appointed as a Director of the HEARing CRC Ltd in April 2007. He has been Chief Financial Officer and Company Secretary of Cochlear Ltd since its listing in 1995 and was Cochlear’s Financial Controller since joining the company in 1990. Mr Mitchell was formerly a Senior Manager with KPMG in Johannesburg, South Africa.

Mr Mitchell was appointed to the Finance and Audit Committee in November 2008.

Prof Jim Piper was appointed as a Director of the HEARing CRC Ltd in April 2007. He is currently Deputy Vice Chancellor (Research) and Prof of Physics at Macquarie University. Prof Piper has extensive expertise and experience gained over 30 years of research in lasers, optics and photonics, and applications in micro fabrication. He has received an Honorary Doctorate from Heriot-Watt University (2006), a Centenary Professorship from Carnegie Trust Universities of Scotland (2004), the Australian Optical Society Medal (1997), the Walter Boas Medal of the Australian Institute of Physics (1984) and the Pawsley Medal of the Australian Academy of Science (1982). Prof Piper has published widely in the field of dye laser design.

Mr Barry Roberts was appointed as a Director of the HEARing CRC Ltd in April 2007 and was also a director of the previous CRC HEAR. Mr Roberts has been Chairman of Siemens Hearing Instruments Pty Ltd since 1994, having first joined the Board in 1988. He joined Siemens Australia in 1960, and was Finance Director, CFO and Deputy CEO of the Australian and New Zealand Group between 1985 and 2002. Mr Roberts has over 40 years experience in budgeting, financial management and control, corporate governance, project management and administration. Mr Roberts is former Chairman of JAS-ANZ and Vice President of the Australian Electrical and Electronics Manufacturers Association.

Mr Roberts is Chair of the Finance and Audit Committee, and a member of the Nominations and Appointments Committee.
MANAGEMENT TEAM

The day-to-day management of the HEARing CRC and HearWorks has been delegated to the CEO and, through him, the Management Team. The Management Team is structured to assist the CEO in coordinating research, education, communications and commercialisation activities through dedicated personnel in each activity area.

Chief Executive Officer
As Director and CEO, A/Prof Robert Cowan provides strategic, scientific and managerial leadership to the HEARing CRC. He is responsible to the Board for the implementation and conduct of the research, postgraduate and professional education, commercialisation, communications and management activities. A/Prof Cowan has over 20 years of achievement in management of collaborative research groups, including 15 years in previous CRCs, having been a Director of the CRC HEAR and Deputy Director of its predecessor CRC for Cochlear Implant, Speech and Hearing Research. A/Prof Cowan has postgraduate qualifications in research and management, and holds a number of international and Australian patents. A/Prof Cowan is a member of the Commonwealth Hearing Services Consultative Committee and an Executive Member of both the International Society of Audiology and Audiology Australia.

Commercial Operations Manager
This officer, to be appointed during the 2008-09 year, will be responsible for the development and operation of the intellectual property (IP) strategy, administration of IP and commercial registers, and assistance to the CEO in commercial negotiations and activities.

Communication and Education Manager
This officer, to be appointed during the 2008-09 year, will be responsible for developing external and internal communication strategies and activities, and for assisting university staff in managing the higher degree and professional education activities of the HEARing CRC.

Executive Assistant
This officer is directly responsible for support of the Chair, the Board and its respective Committees, and the CEO. In addition, the Executive Assistant provides broad support to the activities of the Management Team. Ms Amanda Campbell was appointed to this role during 2007-08. She holds tertiary qualifications in Psychology and Market Research and has over eight years experience in administration, the past five focused on Personal/Executive Assistant roles.

Finance Manager
The Finance Manager is responsible for co-ordinating all financial and operational activities, preparation of all reports as required by the Commonwealth, Board, CEO and Project Leaders, and for management of the audit and tax matters of the HEARing CRC and HearWorks Pty Ltd. Mr Lorensz Senn was appointed during 2007-08 to this role. He is a Certified Practicing Accountant (CPA), holds qualifications in accounting, computing and administration and has held senior positions in industry and government-funded enterprises for over 30 years.
Research Program Coordinators

These part-time positions are responsible for co-ordinating activities and reporting of the multiple projects organised through three of the Core Members. In particular, their role is to ensure effective working relationships across projects and between research and management, and to provide support to the key scientists and Project Leaders.

During 2007-08, Mr Dominic Lou was appointed as the Research Program Coordinator based at Macquarie University and Ms Pam Jackson was appointed as the Research Program Coordinator based at Australian Hearing. Dominic is an educator, an experienced e-learning instructional designer, developer and project manager and has worked with many educational organisations. His research interest is in utilising technology to augment teaching, research and learning. Pam is a qualified office administrator, with experience over many years across a range of industries.

During 2008-09 it is planned to appoint a third part-time Research Program Coordinator to be based at the University of Melbourne, RVEEH Cochlear Implant Clinic.

Research Project Leaders

The day-to-day activities within each research project are supervised by an individual Project Leader who is a scientist or clinician directly involved in the conduct of the project.

COMPANY SECRETARY AND LEGAL ADVISOR

The Company Secretary of the HEARing CRC Ltd as at 30 June 2008 was Ms Jennifer Lightowlers, a principal partner of Francis Abourizk Lightowlers (FAL). She resigned as Company Secretary on 1 September 2008 and Mr Lorensz Senn was appointed to take up that role.

The Company Secretary of HearWorks Pty Ltd as at 30 June 2008 was A/Prof Robert Cowan. He resigned as Company Secretary on 20 August 2008 and Mr Lorensz Senn was appointed to take up that role.

FAL are legal advisors to the HEARing CRC and HearWorks Pty Ltd on all governance, tax and commercial matters.

AUDITORS

KPMG have been appointed as auditors for the HEARing CRC and HearWorks Pty Ltd.
STRATEGIC RESEARCH PLAN

The effects of hearing loss are estimated to cost Australia over $20 billion per annum\(^1\). The HEARing CRC is focused on four research themes aimed at maximising effective lifetime hearing retention as we age and providing better communication solutions for those who may acquire a hearing loss during their lifetime.

To deliver these outcomes, the HEARing CRC brings together a unique international consortium of Members with specialist expertise and capabilities which will facilitate a Strategic Research Plan to address all links in the hearing healthcare chain.

\(^1\) Listen Heart! The Economic Impact and Cost of Hearing Loss in Australia, Access Economics, 2006

RESEARCH COLLABORATIONS

The HEARing CRC research is organised into discrete projects within four Research Programs, with multiple Members contributing to each project.

The Research Projects have been structured around a “Design – Demonstrate – Deliver” framework, in which the HEARing CRC must combine the expertise, infrastructure and capacity of its individual Members to develop new patentable technology, tools and clinical techniques; demonstrate the feasibility and proof-of-concept of these through clinical trials and optimisation; and deliver these outputs to end-users either in collaboration with our Members or through education and involvement of end-user stakeholders in the entire innovation process.

This framework clearly identifies technology transfer as the central focus of the HEARing CRC in achieving its National Research Priority and own strategic aims. Collaborations developed in research are extended to delivery. For example HEARing CRC supports professional education activities including temporal bone workshops, presentations on surgical themes and supervised cochlear implant surgeries in India and China, all of which are aimed at assisting Cochlear Ltd with development of these markets. Similarly, the Hearing Education and Research Network (HEARnet), launched during the 2007-08 year, is aimed at providing a mechanism for the HEARing CRC to develop new linkages by identifying parties with aligned research interests, and to transfer knowledge and clinical expertise to a far wider audience of end-users.

INTERNATIONAL RESEARCH COLLABORATIONS

To ensure that outcomes of HEARing CRC research reach an international audience, a number of strategic international collaborations have been implemented with leading research and clinical groups in specific areas of hearing aid or cochlear implant technology. These international collaborations include:

<table>
<thead>
<tr>
<th>GROUP</th>
<th>PROJECT AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medizinische Hochschule Hannover</td>
<td>Electrode development</td>
</tr>
<tr>
<td>The Chinese University of Hong Kong</td>
<td>Speech processing for tonal language</td>
</tr>
<tr>
<td>The University of Toronto, Sick Children’s Hospital</td>
<td>Bilateral cochlear implants</td>
</tr>
<tr>
<td>University of California (Irvine)</td>
<td>Temporal sound coding</td>
</tr>
<tr>
<td>University of Western Ontario, Canada</td>
<td>Hearing aid fitting</td>
</tr>
<tr>
<td>Washington University School of Medicine</td>
<td>Cochlear implant fitting</td>
</tr>
</tbody>
</table>
COLLABORATIVE RESEARCH

The hearing healthcare chain identifies multiple avenues for innovation – made possible by a multidisciplinary approach.

CLIENT

- Identify molecular therapeutics to prevent hearing loss
- Use MEG to study auditory neurophysiology, tinnitus, CAPD
- Identify user needs and behaviours re use of technology

TECHNOLOGY

- New devices that meet an increasing range of needs with better real-world performance

CLINICAL PROCESS

- Need for fitting and programming to unlock best device potential
- Best use of clinical workforce

INTERVENTION

- Evidence-based selection, habilitation and management
- Barriers to referral

OUTCOMES

- Productivity of people
- Economic gain
Program R1 is in part focused on design and development of genetic and biomolecular diagnostics and pharmacological solutions that address presbycusis and acquired hearing loss resulting from environmental exposure. This may ultimately lead to diagnostic identification of individuals at risk of hearing loss due to presbycusis or susceptibility to damage from sound exposure, enabling them to take steps to maximise their hearing retention. In addition, identification of target molecules may lead to pharmacological approaches to prevention of hearing loss.

During 2007-08, good progress was made in establishing relevant mouse models for evaluation of target molecules, and installation of facilities and development of methodologies for electrical stimulation and recording at the laboratories of WEHI. This work has progressed well, and it is hopeful that target molecules will be identified for evaluation during the coming year. After some discussion, two projects, one focused on biomolecular and one on genetic approaches to hearing loss will be implemented in 2008-09.

A second focus of this program is on investigations of central auditory processing disorders (CAPD) and tinnitus. In particular, studies using the magnetoencephalographic (MEG) imaging capabilities at Macquarie University are aimed at providing intimate knowledge of how acoustic information is transmitted in the central auditory processing pathways in normal hearing and in different kinds of hearing loss. This may identify new approaches to the management and prevention of tinnitus and potentially new understanding of how best to code temporal aspects of speech. During 2007-08, the adult MEG lab was fully established at Macquarie University and planning for commissioning of the world’s only paediatric MEG was well advanced. In addition, discussions were held in regards to the potential application of MEG to cochlear implant speech processing.

In addition, projects in Program R1 are aimed at investigating CAPD in adults and children, including improved means of diagnosing the presence of CAPD, and improved means of managing it to reduce its lifelong effects. This project work will be expedited by recent capital expenditure to create a second laboratory facility at Macquarie University that will be fully dedicated to HEARing CRC research activities.

Of the planned projects within Program R1, three out of five were fully commenced during 2007-08. The two projects that have not yet commenced will evaluate adults and children with CAPD respectively. Delays have been incurred due to allocation of key staff to other projects and a requirement to complete precursor studies funded by the National Health and Medical Research Council. Work on both of these projects will commence in 2008-09.
### Key Scientists:
Prof Doug Hilton, A/Prof Hedrick Dahl, Prof Stephen Crain, Dr Catherine McMahon

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>PROJECT TITLE</th>
<th>PROJECT LEADER</th>
<th>AFFILIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1.1</td>
<td>Central Auditory Processing</td>
<td>To be recruited</td>
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<tr>
<td>R1.1.1</td>
<td>Central Auditory Processing Abnormalities in Adults</td>
<td>To be recruited</td>
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<tr>
<td>R1.1.2</td>
<td>Central Auditory Processing Disorders in Children</td>
<td>Dr Sharon Cameron</td>
<td>Australian Hearing, Sydney</td>
</tr>
<tr>
<td>R1.1.3</td>
<td>Central Auditory Disabilities in Children with Language Impairment</td>
<td>Dr Mridula Sharma</td>
<td>Macquarie University, Sydney</td>
</tr>
<tr>
<td>R1.2</td>
<td>Genetic and Genomic resistance to environmental and age-related hearing loss</td>
<td>Prof Doug Hilton</td>
<td>The Walter and Eliza Hall Research Institute</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A/Prof Henrik Dahl</td>
<td>Murdoch Childrens Research Institute</td>
</tr>
<tr>
<td>R1.3</td>
<td>Objective measurement of tinnitus and its remediation</td>
<td>Dr Catherine McMahon</td>
<td>Macquarie University, Sydney</td>
</tr>
</tbody>
</table>

### RESEARCH PROGRAM R2: INTELLIGENT SOUND PROCESSING

**DEVELOP**
- Research Postgraduate Education
- Clinical Trial Network

**DEMONSTRATE**
- Coding for better hearing from a given sound input
- Improved hardware and more efficient microphone systems

**DELIVER**
- DSP coding for headsets and call-centres
- Next generation hearing aids with improved front-end processing and better performance in noise
- New speech processing for implantable hearing technology
- Commercialisation Professional Education

*Continued on page 24*
Program R2 is focused on reducing the productivity losses associated with hearing loss. These projects address the design and development of improved sound coding algorithms that provide increased intelligibility in background noise, give true binaural benefits and enhance perception of tonal languages when applied to intelligent hearing protection, hearing aids and cochlear implants. In addition, sound processing studies are exploring the combination of acoustic and electrical stimuli for individuals who may use both of these types of devices. Outcomes from these projects will provide improved hearing protection and enhanced communication for those with hearing loss.

Good progress has been made in linked binaural noise reduction for hearing aids, utilising a binaural signal processing scheme that improves speech perception in noise that has been licensed to Siemens and a hearing protection company.

In addition, good progress has been made in studies aimed at bilateral stimulus optimisation for cochlear implants.

To adequately evaluate new strategies developed for this research, coding work to implement algorithms in the Cochlear Freedom speech processor is required and is currently being undertaken.

Support and infrastructure facilities for these projects based in Melbourne will be enhanced by the planned move to new research facilities co-located with the University of Melbourne. These new dedicated sound facilities will expand the range of studies which can be undertaken.

Of the planned projects within Program R2, all were commenced during 2007-08, except Project R2.1, sound coding for electro-acoustic hybrid applications, which has been delayed due to problems in recruiting additional subjects. In addition, a new project, Project R2.0 Reproducing the Pure Tone was initiated following discussions amongst the sound processing research group. This project is primarily a “think tank” which encourages open exchange of ideas and approaches across team members from all HEARing CRC sound coding projects and with other researchers and engineers from our Core and Support Members.

**Key Scientists:** A/Prof Harvey Dillon, A/Prof Peter Seligman, Prof Hugh McDermott

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>PROJECT TITLE</th>
<th>PROJECT LEADER</th>
<th>AFFILIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2.0</td>
<td>Reproducing the Pure Tone (formerly R2.3.2)</td>
<td>A/Prof Peter Seligman</td>
<td>Cochlear Ltd</td>
</tr>
<tr>
<td>R2.1</td>
<td>Sound coding for electro-acoustic hybrid devices and applications</td>
<td>To be recruited</td>
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<tr>
<td>R2.2</td>
<td>Bilateral sound processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R2.2.1</td>
<td>Bilateral signal processing for use in hearing aids and/or cochlear implants</td>
<td>Mr Jorge Meija</td>
<td>Australian Hearing</td>
</tr>
<tr>
<td>R2.2.2</td>
<td>Bilateral stimulus optimisation for cochlear implants</td>
<td>Dr Richard vanHoesel</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R2.3</td>
<td>Improved sound coding for cochlear implants</td>
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<td></td>
</tr>
<tr>
<td>R2.3.1</td>
<td>Improved coding and transduction of pitch, fine spatio-temporal structure and speech in noise for cochlear implant users</td>
<td>Mr Andrew Vandali</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R2.4</td>
<td>Unilateral Front-end Processing</td>
<td>A/Prof Peter Seligman</td>
<td>Cochlear Ltd</td>
</tr>
</tbody>
</table>
Program R3 is aimed at design and development of new technology for implants, hearing aids and hearing protection. This technology will enhance function and communication, as well as enable active hearing protection for workers in call centres and other telecommunications applications.

A main focus of activity has been ongoing biosafety studies to reduce the inflammatory response resulting from insertion of the cochlear electrode array. This work will be enhanced by the appointment of a medical biologist during the 2008-09 year.

Projects aimed at new electrode designs have progressed well, with first-time-in-human studies of a number of new electrode designs. In particular, the development of the Hybrid-L electrode array for use in patients with significant residual acoustic hearing was a major advance. A number of these projects have been slowed by issues in recruitment of suitable patients, and a principal focus for the 2008-09 year will be to extend our potential patient pool to include subjects in Sydney and Brisbane.

Bioengineering studies are also planned to investigate new approaches for coding of speech, for example through enhanced Bone Anchored hearing aids or middle ear implants. Although discussions have been held with partner Cochlear Ltd, these projects have not progressed to implementation.

In the comfort, safety and intelligibility area, a new Speech Referenced Limiting (SRL) scheme is displaying impressive performance. This has been implemented in a Windows Vista version within the personal computer environment to protect listeners of computer delivered speech from uncontrolled speech sounds.

Similarly, good progress has been made in the area of implantable hearing enhancements, with a Markl Muffler active noise control earmuff design moving into the prototyping stages. A number of manufacturing issues are yet to be addressed prior to initial field testing of this design.

All planned projects within Program R3 were commenced during 2007-08.

Continued on page 26
## Research Programs (cont.)

**Key Scientists:** A/Prof Jim Patrick, A/Prof Robert Cowan, Prof Gordon Wallace, Prof Stephen O’Leary, A/Prof Rob Briggs

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Title</th>
<th>Project Leader</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3.1</td>
<td>Biosafety studies for electrical parameters, materials and designs</td>
<td>Dr Michael Tykocinski</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R3.2</td>
<td>Improved cochlear implant electrodes</td>
<td></td>
<td></td>
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<tr>
<td>R3.2.1</td>
<td>Optimisation of electro-neural interface</td>
<td>Dr Silvana Corkovic</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R3.2.2</td>
<td>Enhanced electrode design</td>
<td>A/Prof Rob Briggs</td>
<td>The University of Melbourne</td>
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<tr>
<td>R3.3</td>
<td>Fully implantable hearing enhancements</td>
<td></td>
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<tr>
<td>R3.3.1</td>
<td>Development of improved totally implantable TIKI microphone system</td>
<td>A/Prof Peter Seligman</td>
<td>Cochlear Ltd</td>
</tr>
<tr>
<td>R3.3.2</td>
<td>Implantable Sensor Design</td>
<td>Dr Andy Zhang</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R3.4</td>
<td>Electro-acoustic implant design</td>
<td>A/Prof Bob Cowan</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R3.5</td>
<td>BAHA and ME implant enhancement and optimisation</td>
<td>A/Prof Jim Patrick</td>
<td>Cochlear Ltd</td>
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<tr>
<td>R3.6</td>
<td>Comfort, safety and intelligibility</td>
<td></td>
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<tr>
<td>R3.6.1</td>
<td>Noise reduction in listening devices - speech referenced limiting in telecommunications and computing</td>
<td>Dr Michael Fisher</td>
<td>Australian Hearing</td>
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<tr>
<td>R3.6.2</td>
<td>Active noise control core technology</td>
<td>Dr Michael Fisher</td>
<td>Australian Hearing</td>
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<tr>
<td>R3.6.3</td>
<td>Active noise control hearing protection</td>
<td>Mr Mark Harrison</td>
<td>The University of Melbourne</td>
</tr>
<tr>
<td>R3.6.4</td>
<td>Active noise control hearing assessment</td>
<td>Dr Michael Fisher</td>
<td>Australian Hearing</td>
</tr>
</tbody>
</table>
Program R4 aims to design and develop clinical applications that individualise hearing lifecycle management, improve individual outcomes, provide for greater clinical efficiencies, and enable more efficient professional training/practice of audiologists, surgeons and other professionals. In particular, studies of barriers to device use (as applied to hearing protection, hearing aids, or referral/use of cochlear implants) will provide knowledge that is important to industry partners and to clinical service providers in maximising uptake and use of devices.

An important group of projects within this programme will focus on new approaches to the fitting of devices which reduce clinical time (thereby increasing efficiencies) and provide the option of remote fitting, potentially through internet-based applications. Fitting automation will be an important development for industry partners that will enable rapid expansion of markets, particularly when coupled with research identifying particular barriers to device uptake and use.

A final set of projects will focus on improved surgical processes for implanting or fitting new acoustic or implantable devices. This will include development of new surgical tools, and innovative training methodologies and environments.

In particular, interim findings of the Outcomes in Children Project, based on results for 438 children, indicate the importance of early intervention. This has led to the production of an audiological circular to guide paediatric referrals for cochlear implantation. In addition, the directional microphones for children research is the only project in the world that explores the applicability of technology in hearing devices for infants and young children by collecting real-world acoustical and behavioural data. The data collected to date has demonstrated clear benefits for use of directional microphones in all ages of children.

Program R4 comprises a significant number of projects, the majority of which were commenced during 2007-08.

Continued on page 28
Key Scientists: Prof Richard Dowell, Prof Greg Leigh, Prof Louise Hickson, Dr Pam Dawson, Dr Gitte Keidser, A/Prof Teresa Ching

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>PROJECT TITLE</th>
<th>PROJECT LEADER</th>
<th>AFFILIATION</th>
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<tbody>
<tr>
<td>R4.1</td>
<td>Overcoming barriers to rehabilitation and prevention</td>
<td>Prof Louise Hickson</td>
<td>The University of Queensland</td>
</tr>
<tr>
<td>R4.1.1</td>
<td>Overcoming barriers to hearing rehabilitation in adults</td>
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<tr>
<td>R4.1.2</td>
<td>Overcoming barriers to referral for hearing aids and/or cochlear implants</td>
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<tr>
<td>R4.1.3</td>
<td>Overcoming barriers to prevention of noise injury</td>
<td>Dr Warwick Williams</td>
<td>Australian Hearing</td>
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<tr>
<td>R4.2</td>
<td>Improving habilitation</td>
<td>To be recruited</td>
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<tr>
<td>R4.2.1</td>
<td>Approaches to improving efficiency of adult habilitation</td>
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<tr>
<td>R4.2.2</td>
<td>Approaches to enhancing habilitation in children</td>
<td>Dr Shani Dettman, Dr Dimity Dornan</td>
<td>The University of Melbourne, Hear &amp; Say Centre for Deaf Children</td>
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<tr>
<td>R4.2.3</td>
<td>Approaches to improving literacy in children using hearing aids and cochlear implants</td>
<td>Dr Pauline Nott</td>
<td>Advisory Council for Children with Impaired Hearing</td>
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<tr>
<td>R4.3</td>
<td>Trainable Devices (Hearing Aids and Cochlear Implants)</td>
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<tr>
<td>R4.3.1</td>
<td>Improved trainable and self-fitting hearing aids</td>
<td>Dr Gitte Keidser</td>
<td>Australian Hearing</td>
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<td>R4.3.2</td>
<td>Trainable cochlear implants</td>
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<td>Cochlear Ltd</td>
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<td>R4.3.3</td>
<td>Laboratory simulation of 3D real-world environments</td>
<td>Mr Dan Zhou</td>
<td>Australian Hearing</td>
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<td>R4.3.4</td>
<td>Psychophysical tests in simulated real-world environments</td>
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<tr>
<td>R4.4</td>
<td>Improved cochlear implant surgery</td>
<td>Prof Stephen O’Leary</td>
<td>The University of Melbourne</td>
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<tr>
<td>R4.4.1</td>
<td>Minimisation of hearing loss due to cochlear implantation</td>
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<tr>
<td>R4.4.2</td>
<td>Optimisation of surgical delivery</td>
<td>Prof Stephen O’Leary</td>
<td>The University of Melbourne</td>
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<tr>
<td>R4.5</td>
<td>Internet and telecommunications-based assessment and rehabilitation</td>
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<tr>
<td>R4.5.1</td>
<td>Remote training, supervision and up-skilling of clinicians</td>
<td>Dr Catherine McMahon</td>
<td>Macquarie University</td>
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<td>R4.5.2</td>
<td>Remote assessment of hearing</td>
<td>A/Prof Greg Leigh</td>
<td>The Royal Institute for Deaf and Blind Children</td>
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<td>R4.5.3</td>
<td>Remote re-mapping of cochlear implants</td>
<td>Ms Emma Rushbrooke</td>
<td>Hear &amp; Say Centre for Deaf Children</td>
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<td>R4.6</td>
<td>Prescription and fitting of devices and management of patients</td>
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<tr>
<td>R4.6.1</td>
<td>Evidence-based understanding of device selection and management decisions</td>
<td>Prof Richard Dowell</td>
<td>The University of Melbourne</td>
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<td>R4.6.2</td>
<td>Outcomes for aided children</td>
<td>A/Prof Teresa Ching</td>
<td>Australian Hearing</td>
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<tr>
<td>R4.6.3</td>
<td>Derivation and production of the NAL-NL2 prescription procedure</td>
<td>A/Prof Harvey Dillon</td>
<td>Australian Hearing</td>
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<td>R4.6.4</td>
<td>Management of children with auditory neuropathy</td>
<td>Dr Catherine McMahon</td>
<td>Macquarie University</td>
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<td>R4.6.5</td>
<td>Prescription of directional microphones for children</td>
<td>A/Prof Teresa Ching</td>
<td>Australian Hearing</td>
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<td>R4.6.6</td>
<td>Prescription of device features and fully automatic devices</td>
<td>Dr Gitte Keidser</td>
<td>Australian Hearing</td>
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<td>R4.6.7</td>
<td>Device evaluation, verification fine-tuning methods</td>
<td>Dr Gitte Keidser</td>
<td>Australian Hearing</td>
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<td>R4.7</td>
<td>Novel and efficient clinical assessment tools</td>
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<td>Rapid cortical assessment</td>
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<td>Cortical evaluation of implant performance</td>
<td>Dr Catherine McMahon</td>
<td>Macquarie University</td>
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</table>
COMMERCIALISATION AND UTILISATION

RESEARCH PROGRAM C: CLINICAL TRIALS AND PRODUCT DEVELOPMENT

<table>
<thead>
<tr>
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<th>PROJECT TITLE</th>
<th>PROJECT LEADER</th>
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<tr>
<td>C1.1</td>
<td>Clinical Trials and Product Validation</td>
<td>Ms Kerrie Plant</td>
<td>Cochlear Ltd</td>
</tr>
<tr>
<td>C2.1</td>
<td>Active Occlusion Reduction in Hearing Aids</td>
<td>Mr Jorge Meija</td>
<td>Australian Hearing</td>
</tr>
<tr>
<td>C3.1</td>
<td>Novel Clinical Assessment Tools</td>
<td>Mr Teck Loi</td>
<td>Australian Hearing</td>
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<tr>
<td>C3.1.1</td>
<td>HEARLab hardware and aided cortical assessment audiometer</td>
<td>Mr Teck Loi</td>
<td>Australian Hearing</td>
</tr>
<tr>
<td>C3.1.2</td>
<td>Automatic cortical audiometer</td>
<td>A/Prof Harvey Dillon</td>
<td>Australian Hearing</td>
</tr>
<tr>
<td>C3.1.3</td>
<td>Fast ABR audiometer</td>
<td>Mr Teck Loi</td>
<td>Australian Hearing</td>
</tr>
</tbody>
</table>

New technology, sound coding strategies or fitting methodologies developed within the four Research Programs must be proven safe and effective for use with clients, this responsibility falls within the Clinical Trials Program.

Project C1.1 will develop Standard Operating Procedures for clinical trials conducted by the HEARing CRC under the Australian Therapeutics Administration guidelines or the Royal Victorian Eye and Ear Hospital Human Research Ethics Committee.

INTELLECTUAL PROPERTY MANAGEMENT

To maximise the economic returns from commercialisation of research outcomes, HearWorks works closely with industry Members to ensure appropriate protection and strategic management of IP, including both provisional and full international patents, trademarks, copyright and trade secrets. To ensure freedom to operate, all IP developed by the HEARing CRC is legally owned by the Trustee (initially HearWorks) on behalf of the beneficial owners, who are the Project participants. During the 2008-09 year, it is planned to replace HearWorks with a new company HEAR IP Pty Ltd, which will serve the single purpose of Trustee of the HEARing CRC IP Trust.

In operational practice, individual Project Leaders are responsible for preparing invention disclosures. Working with industry collaborators, the commercial potential of individual inventions is determined and a decision reached on patenting strategy. Advice on IP management and strategy is provided to HearWorks both by legal counsel FAL and by individual patent firms.

In addition, projects within this program assist with documentation for technology being transferred to industry or clinical end-users, for example project C2.1, enabling commercialisation of occlusion reduction technology. Project C3.1 is focused on documentation for HEARLab platform and development of new audiological test modules.

During 2008-09, it is intended to employ a Commercial Operations Manager to coordinate the management of intellectual property activities.

STRATEGIES AND ACTIVITIES

All HEARing CRC Projects operate under a clearly written Project Charter, which identifies the planned commercialisation/utilisation strategy. This is updated annually and approved by the Board. In most cases, commercialisation occurs through licensing to the industry Members involved as Project participants, or through clinical uptake and use achieved through the network of end-user clinical and professional Members.

Licencing of IP is conducted through HearWorks, which acts as the commercialisation/licensing agent for the HEARing CRC, as well as for the CRC HEAR IP Trust created by the predecessor CRCs. Wherever possible, licensing has been achieved through Australian companies. However, this has been balanced against the potential returns from world-wide marketing of technology.
COMMERCIALISATION AND UTILISATION (cont.)

Under the HEARing CRC Members Agreement, a number of industry Members have been assigned first rights in specific fields of interest. This ensures clear lines of commercial interest can be identified within individual Projects.

The HEARing CRC has also adopted a number of strategies to drive end-user uptake of technology, either through interfacing with industry Members, clinical end-users (i.e. audiologists or other hearing healthcare professionals) or through direct contact with adults and children who use the technology.

Specific activities within this strategy include:

- providing technological innovations under licence to Cochlear Ltd or to Siemens Hearing Instruments that will lead to commercial products with enhanced performance, new function, or improved process for manufacture;
- providing Research Reports to Cochlear Ltd which can be used to disseminate research project outcomes to a worldwide audience;
- conducting projects specifically aimed at the needs of new developing markets, particularly the Asia Pacific region (for example, automated device programming);
- promoting practical improvements to clinical procedures that can be easily implemented by clinicians working in the field. These are designed to provide savings in terms of clinical time and cost efficiencies for health services through use of our partner websites, conferences and publications, and specifically through presentations as part of the Continuing Professional Development program of CRC Member Audiology Australia;
- providing technological innovations more widely through direct sales and licensing by HearWorks, through partnership with our Members (for example, Australian Hearing) or through the involvement of third parties such as Polaris Communications Pty Ltd;
- providing professional training to surgeons and clinicians through our Cochlear Implant Training Workshop and Visiting Consultants program as an additional means of ensuring that research outcomes reach our target audience and are used, and also to facilitate the development and expansion of markets for hearing technology and clinical practice; and
- through the establishment of HEARnet, creating a broad Australian-based network of agencies, companies, institutions and individuals with an interest in hearing research and education, all of whom are potential end-users of HEARing CRC outcomes.

COMMERCIAL ARRANGEMENTS WITH INDUSTRY

HearWorks has been extremely active in arranging commercial licences for IP and technology developed by the previous CRC HEAR, generating commercial returns of over $3.5 million during the 2007-08 year.

The following table shows licensing activities.

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>LICENCEE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochlear implant technology</td>
<td>Cochlear Ltd</td>
<td>Single fee</td>
</tr>
<tr>
<td>Trainable hearing aid technology</td>
<td>Siemens</td>
<td>Royalty</td>
</tr>
<tr>
<td>HearLab®</td>
<td>Frye Electronics</td>
<td>Royalty</td>
</tr>
<tr>
<td>Frequency transposition technology</td>
<td>Phonak AG</td>
<td>Single fee</td>
</tr>
<tr>
<td>Shriek protection technology</td>
<td>Polaris Communications</td>
<td>Royalty</td>
</tr>
<tr>
<td>Diary of Early Language®</td>
<td>Cochlear Ltd</td>
<td>Single fee</td>
</tr>
</tbody>
</table>

In addition to the above licensing activities, HearWorks received licence fees for use of the SPEAR3 Speech Research Platform, the Computer-Aided Speech and Language Analysis software (CASALA™) and HEARing CRC Speech Tests from a number of international research groups.
PATENTS

The following table shows patents taken out by HearWorks Pty Ltd during 2007-08.

<table>
<thead>
<tr>
<th>APPLICATION NUMBER</th>
<th>TITLE</th>
<th>APPLICANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2008905703</td>
<td>Bilateral beamformer for assistive listening devices</td>
<td>HearWorks</td>
</tr>
<tr>
<td>2008902010</td>
<td>Self-fitting hearing aid</td>
<td>HearWorks</td>
</tr>
<tr>
<td>2008902008</td>
<td>Multi-electrode suppression of noise (MESON)</td>
<td>HearWorks</td>
</tr>
</tbody>
</table>

TECHNICAL REPORTS TO INDUSTRY MEMBERS

In some cases, HEARing CRC Project outcomes may comprise knowledge that is not easily codified into patent applications, but rather forms know-how. In such cases, this information is provided as Technical Reports to industry or clinical Members, and may serve to guide company design and development.

SPIN-OFF COMPANIES

Dynamic Hearing P/L

Six years since spinning out from CRC HEAR, Dynamic Hearing (DH) has grown into a mature company, with its technology included in over one million products.

DH originally licensed its flagship technology, Adaptive Dynamic Range Optimisation (ADRO®) to the hearing aid industry. It now licences ADRO across multiple markets, including consumer electronics, where ADRO is renowned as a leading processor in Bluetooth Headset products. ADRO is supported by other Digital Signal Processing (DSP) modules developed by DH, including directional microphone technology, advanced feedback cancellation technology, noise reduction capabilities and other amplification modes including wide dynamic range compression. These technologies can also be used within different applications, including amplified telephones, Bluetooth headsets, and implantable devices.

Well known consumer brands featuring technology developed by DH include Philips, LG, htc, and Plantronics. Hearing Aid and Assistive Listening Device companies working closely with DH include Intricon, Rion, America Hears and Interton.

CEO, Dr. Elaine Saunders has led the company since its inception at the beginning of 2002. She has seen the organisation grow and move out of its original home in the hearing precinct of East Melbourne to its own offices in nearby Richmond. The building now houses 25 employees, along with two sound booths and a hearing clinic which offers hearing services to the public.

DH continues to identify new growth opportunities across the hearing continuum.

Microphones Pty Ltd

Established in 2001, Microphones Pty Ltd holds intellectual property developed by the previous CRC HEAR. HearWorks holds 90% of the equity of Microphones, with the remaining 10% held by two inventors. Microphones did not actively trade during 2007-08 and it is now planned to close the company and assign IP to HearWorks.

The HEARing CRC creates ‘Sound Value’ for Australia on three key dimensions:

→ Industry value creation: working with our industry Members to develop advanced technology and improved manufacturing and service processes to create, grow and sustain markets for hearing technology related products and services.

→ Better, more productive lives for individuals: the products and services brought to the market will assist those with hearing disabilities as well as the community as it ages. This will maximise effective lifelong hearing, giving the best chance to participate in social, learning and work environments, leading to happier, healthier and more productive lives.

→ Value to the economy of improved hearing: through the effective development of new technology and its application, individual employment participation and industry growth will create economic returns, while at the same time the significant cost burden of education, health and welfare for the hearing-impaired population is reduced.

Building on a substantial commercial base from its two CRC predecessors, The HEARing CRC creates assets for the Members and for Australia, including:

→ Intellectual Property (IP)
→ Growing Capabilities
→ Expanding Networks
Similarly for the HEARing CRC, communication is fundamental to achievement of outcomes, particularly as we have such a diverse group of stakeholders and potential end-users.

Knowledge transfer of research findings and outcomes through peer-reviewed publications and conference presentations is a vital element of our communications strategy. Research staff have been active in peer-reviewed journals, publications, invited keynote addresses and presentations at numerous Australian and international scientific meetings, these are listed on page 39.

To further disseminate knowledge, the HEARing CRC has developed and nurtured links with clinicians in the fields of cochlear implants and hearing aids, for example through continuing professional development activities with Audiology Australia (ASA). Member organisations, such as Cochlear Ltd, distribute results of our clinical studies to clinical specialists, product managers and marketing staff for training purposes and to address product-related issues. Similarly, outcomes of hearing aid and clinical activities are circulated through Australian Hearing’s clinical services and the ASA, to reach clinicians working with end-users of hearing rehabilitation technology and services. These links are also important in the Education Program, providing commercial and professional input to the teaching program for audiologists, teachers of the deaf and Ear, Nose and Throat (ENT) surgeons.

Internal publications and communications also provide a vital link for individual CRC staff members located within our geographically-isolated Parties.

In May 2008, two members of the HEARing CRC were invited to deliver addresses that honour two great Australian’s contributions to hearing research and healthcare. A/Prof Robert Cowan presented the 10th Libby Harricks Memorial Oration ‘Access, equity and hearing loss in Australia in 2008’ at a Deafness Forum event held in association with the 5th National Deafness Sector Summit. A/Prof Harvey Dillon presented the Denis Byrne Memorial Lecture ‘Factors Affecting Aid Outcome’ at the ASA XVIII National Conference. The latter was delivered at a session titled ‘Innovations in Audiology’, co-hosted with the HEARing CRC as part of the 2008 Australian Innovation Festival. This celebration of Australia’s hearing science, technology and service provision included round table discussions on Hearing Aid Technology and Universal Newborn Screening, displays and the official launch of HEARnet by the CEO of Research Australia, Rebecca James.

A/Prof Harvey Dillon presented the Denis Byrne Memorial Lecture at the ASA XVIII National Conference. This was also part of the 2008 Australian Innovation Festival, which included panel discussions and the launch of HEARnet.
The HEARing CRC engages in a range of other media communications activities. A/Prof Robert Cowan was involved in the opening of Hearing Awareness Week in August 2007 with the Lord Major, the Right Honourable John So, an annual event that raises awareness of hearing loss and chronic ear disorders, so that those who are affected experience greater acceptance and better accommodation. In addition, various members of the HEARing CRC contributed to public discussion of the impact of listening to music through MP3 players as well as links between noise pollution and premature death.

Communication is also fundamental to effective collaboration and significant investment has been made in travel and teleconferencing to link our Members in different states and locations. In 2008-09, videoconferencing facilities will be fully implemented in the HEARing CRC’s new headquarters, creating improved linkages with major nodes in Sydney.

During 2008-09, the Hearing CRC will employ a full-time Communication and Education Manager, who will review the Hearing CRC’s communication strategy and implement means to improve it.

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**END-USER INVOLVEMENT AND CRC IMPACT ON END-USERS**

The Hearing CRC works with Cochlear Ltd to host temporal bone workshops, presentations on surgical themes and supervised cochlear implant surgeries in India and China to assist Cochlear Ltd with development of this market. The CRC also actively supports Cochlear’s VISTA (Visiting Implant Specialists to Australia) Program, providing vital assistance to Cochlear Ltd in maintaining and expanding its world position.

Outcomes of clinical studies are disseminated in peer-reviewed publications, Technical Reports, Research reports and special papers produced by Cochlear Ltd and Australian Hearing. These are distributed to clinical specialists, product managers and marketing staff within Cochlear Ltd for training purposes and to address product issues.

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A/Prof Robert Cowan presented the 10th Libby Harricks Memorial Oration

A/Prof Robert Cowan launched Hearing Awareness Week in August 2007 with the Lord Major, the Right Honourable John So
## End-user Involvement in CRC Activities

<table>
<thead>
<tr>
<th>END-USER NAME</th>
<th>RELATIONSHIP WITH CRC</th>
<th>TYPE OF ACTIVITY AND END-USER LOCATION</th>
<th>NATURE / SCALE OF BENEFITS TO END-USER</th>
</tr>
</thead>
</table>
| **Australian Hearing**        | Core Member           | ➤ Collaborator in technology development and clinical research projects.  
                                  ➤ Collaborator in commercial development of NAL–NL1, sound protection algorithms for SoundShield, and HEARLab.  
                                  ➤ Partner in postgraduate and professional education.  
                                  *(Sydney/National)* | ➤ Significant cost-savings from end-user application of new services in AH hearing centre network.  
                                  ➤ Significant royalty returns from CRC IP.  
                                  ➤ Support for external grant applications and additional collaborations. |
| **Cochlear Ltd**              | Core Member           | ➤ Industry partner in cochlear implant research.  
                                  ➤ Industry participant in education program.  
                                  *(Sydney/International)* | ➤ Implant technology has contributed to export sales and market development.  
                                  ➤ Expansion of market through Workshop Program to establish new clinics in Asia-Pacific.  
                                  ➤ Support for Cochlear promotional activity. |
| **Macquarie University**      | Core Member           | ➤ Collaborator in technology development and clinical research projects.  
                                  ➤ Provider of specialised magnetoencephalographic (MEG) imaging laboratory facilities.  
                                  ➤ Partner in postgraduate education.  
                                  *(Sydney)* | ➤ Potential return from CRC IP.  
                                  ➤ Technical support to enhance MEG laboratory testing facilities.  
                                  ➤ Support of external grant applications and additional collaborations.  
                                  ➤ Support for Master of Clinical Audiology research projects.  
                                  ➤ International exposure through joint promotional activities. |
| **Siemens Hearing Instruments** | Core Member           | ➤ Collaborator in technology research studies.  
                                  ➤ Commercialisation.  
                                  *(International)* | Hearing aid technology licenced for use in new Siemens products. |
<table>
<thead>
<tr>
<th>END-USER NAME</th>
<th>RELATIONSHIP WITH CRC</th>
<th>TYPE OF ACTIVITY AND END-USER LOCATION</th>
<th>NATURE / SCALE OF BENEFITS TO END-USER</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Melbourne</td>
<td>Core Member</td>
<td>➤ Collaborator in technology development and clinical research projects. ➤ Provider of equipment and facilities such as micro-focus radiography. ➤ Partner in postgraduate and professional education. <em>(Melbourne)</em></td>
<td>➤ Significant royalty returns from CRC IP. ➤ Support for external grant applications and additional collaborations. ➤ Access to Cochlear Implant Workshop for staff training. ➤ Licence to use SPEAR3 Research Systems. ➤ International exposure through promotional activities with Cochlear.</td>
</tr>
<tr>
<td>Acoustics Pty Ltd</td>
<td>Support Member</td>
<td>Collaborator in technology research. <em>(Melbourne)</em></td>
<td>End-user of technology outcomes.</td>
</tr>
<tr>
<td>Audiology Australia</td>
<td>Support Member</td>
<td>Partner in postgraduate and professional education <em>(National)</em></td>
<td>Rights to disseminate clinical information to Members.</td>
</tr>
<tr>
<td>Phonak AG</td>
<td>International Contract Partner</td>
<td>Collaborator in technology development. <em>(International)</em></td>
<td>Licence to use frequency transposition technology.</td>
</tr>
<tr>
<td>Royal Victorian Eye and Ear Hospital</td>
<td>Support Member</td>
<td>➤ Collaborator in cochlear implant and biological research (provider experimental animal facility) ➤ Partner in postgraduate and professional education <em>(Melbourne)</em></td>
<td>➤ Significant cost-savings from end-user application of new clinical services. ➤ International exposure through promotional activities. ➤ Further opportunity for collaboration.</td>
</tr>
<tr>
<td>Sydney Cochlear Implant Centre</td>
<td>Support Member</td>
<td>Collaboration in clinical research. <em>(Sydney)</em></td>
<td>➤ Significant cost-savings from end-user application of new clinical services. ➤ International exposure through promotional activities.</td>
</tr>
</tbody>
</table>
EDUCATION AND TRAINING

THE HEARING CRC ALSO CREATES ‘SOUND VALUE’ THROUGH ITS EDUCATION PROGRAM, WHICH AIMS TO DELIVER INDUSTRY-READY GRADUATES AND TO UPSKILL PROFESSIONALS IN THE FIELD RESULTING IN INCREASED CLINICAL CAPACITY FOR AUSTRALIA’S HEARING HEALTHCARE INDUSTRY.

Specific strategies include:

- enhancing the postgraduate learning experience through active involvement of supervisors and lecturers from non-university CRC partners and incorporating;
- non-traditional subject areas such as IP management and project management, together resulting in improved awareness of the needs of industry in applied research and enhanced employment opportunities for our graduates; and
- developing innovative professional education programs for use in Australia, Asia Pacific and world-wide that help to ensure uptake of new, more efficient technology and clinical practices in the fields of cochlear implants and hearing aids in Australia and internationally.

<table>
<thead>
<tr>
<th>PROJECT ID</th>
<th>PROJECT TITLE</th>
<th>PROJECT LEADER</th>
<th>AFFILIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.1</td>
<td>Postgraduate Higher Degree Student Projects</td>
<td>Communication and Education Manager</td>
<td>HEARing CRC</td>
</tr>
<tr>
<td>E2.1</td>
<td>Active Occlusion Reduction in Hearing Aids</td>
<td>Communication and Education Manager</td>
<td>HEARing CRC</td>
</tr>
</tbody>
</table>
POSTGRADUATE EDUCATION

In 2007-08, the HEARing CRC did not involve any new PhD or Masters students in its Research Projects. However, a number of PhD students from the previous CRC HEAR have continued to complete their doctoral programs under HEARing CRC supervision.

Postgraduate Students Status

<table>
<thead>
<tr>
<th>NAME</th>
<th>UNIVERSITY</th>
<th>F/P TIME</th>
<th>FUNDING</th>
<th>SUPERVISORS</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jorge Mejia</td>
<td>Sydney</td>
<td>Part</td>
<td>CRC staff funded</td>
<td>S Carlisle, H Dillon</td>
<td>In progress</td>
</tr>
<tr>
<td>George Raicevich</td>
<td>Swinburne</td>
<td>Part</td>
<td>No CRC HEAR funds after March 2006</td>
<td>E Harvey, H Dillon</td>
<td>Awarded</td>
</tr>
<tr>
<td>Brett Swanson</td>
<td>Melbourne</td>
<td>Part</td>
<td>Cochlear Ltd staff funded (no CRC HEAR support)</td>
<td>P Blamey, H McDermott, J Patrick</td>
<td>Awarded</td>
</tr>
<tr>
<td>Lei Andy Zhang</td>
<td>Melbourne</td>
<td>Part</td>
<td>CRC staff funded</td>
<td>P Seligman, A Klein, R Cowan</td>
<td>Awarded</td>
</tr>
</tbody>
</table>

UNIVERSITY OF MELBOURNE, SPECIALIST CERTIFICATE IN BIOMEDICAL RESEARCH MANAGEMENT

The HEARing CRC has worked with the University of Melbourne to develop a Specialist Certificate in Clinical Research (Biomedical Research Management) course, which was delivered for the third time during 2007-08. The course covers all the important areas that effective biomedical research managers need to be conversant with, and make decisions about, to develop sound biomedical research project plans and budgets. The focus is then on developing skills for the proactive management and communication projects where uncertainty is the norm. Finally, assessment is built around demonstrating the ability to apply skills learned to a real work based project. The course is coordinated by A/Prof Robert Cowan.
PROFESSIONAL EDUCATION ACTIVITIES

INTERNATIONAL COCHLEAR IMPLANT TRAINING PROGRAM

In collaboration with staff of the Royal Victorian Eye and Ear Hospital, The Bionic Ear Institute, Cochlear Ltd and The University of Melbourne, the Hearing CRC has continued to conduct cochlear implant professional training workshops for surgeons and clinicians from Australia and Asia Pacific regions. Three four-day workshops were held during the year, two adult-focused and one paediatric.

The Cochlear Implant Training Workshop is aimed at surgeons and clinicians working with adults. Attendees include researchers and professionals seeking to gain a generalised knowledge of cochlear implant technology and management, surgeons or clinicians embarking on new cochlear implant programs with adult patients, and experienced clinicians wishing to review procedures and management techniques or to update their knowledge of hardware and speech processing.

The Workshop is conducted through a mix of formats including lectures, small group discussions and tutorials. Individual sessions cover history of the development and underpinning research, candidature, cochlear implant system hardware and function, programming, medical/surgical considerations, habilitation, outcomes evaluation and new directions in research. The Workshop includes programming tutorials providing direct experience with implant users. A series of comprehensive audiovisual presentations (including interactive video link to a live Cochlear Implant surgery) and an extensive reference manual are provided.

The optional Temporal Bone/Surgical Workshop for surgeons runs in concurrent sessions. This program includes a temporal bone workshop, plus tutorial-format discussion of surgical technique and medical management issues with experienced surgeons.

The Paediatric Cochlear Implant Workshop is for experienced clinicians and educators actively involved in the management of implanted children, or those wishing to embark on cochlear implant programs with children.

The Workshop covers all specialised issues relevant to cochlear implant management in children, including paediatric candidature, preoperative hearing aid optimisation, device issues in children including use of RF units, paediatric mapping techniques, medical/surgical issues in children, techniques in paediatric habilitation, evaluation techniques for assessing speech perception, and speech production and language in children with a wide range of developmental ages and linguistic skill. In addition, special sessions address educational management for different age groups of children.

Sessions provide opportunities for direct observation of clinical practice, comprehensive audio-visual instruction and small workgroup tutorials.

The Workshop Program is an effective means of helping to develop the necessary infrastructure in Asia Pacific for better uptake of cochlear implant and hearing aid technology.

VISTA

The VISTA program (Visiting Implant Specialists to Australia) is run in conjunction with Cochlear Ltd and provides the opportunity for ENT surgeons from around the world to receive updated information regarding research and development in the field of cochlear implants and to exchange ideas and strategies during a week long tour in Sydney and Melbourne.

Cochlear Implant Training Workshops
PUBLICATIONS

JOURNAL ARTICLES


CONFERENCE PRESENTATIONS


<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>14:</td>
<td>Ching TYC. <em>Does early intervention lead to better language outcomes?</em> The Educators of Deaf Students Association Annual Conference, Sydney, July 2007.</td>
</tr>
<tr>
<td>18:</td>
<td>Ching TYC. <em>Progress and interim findings of the NAL longitudinal outcomes study</em>. The 4th National Newborn Hearing Screening Conference, Brisbane, October 2007.</td>
</tr>
<tr>
<td>19:</td>
<td>Ching TYC. <em>What are the factors affecting outcomes of hearing impaired children?</em> The XXIXth International Congress of Audiology, Hong Kong, June 2008.</td>
</tr>
<tr>
<td>24:</td>
<td>Ching TYC. <em>Two are better than one – evidence from bilateral implantation and bimodal hearing</em>. The Cochlear Symposium, XXIXth International Congress of Audiology, Hong Kong, June 2008.</td>
</tr>
<tr>
<td>29:</td>
<td>Cowan R. <em>Cochlear implant and hearing aid on the same ear – the benefits of electroacoustic stimulation with the Nucleus Hybrid Contour implant</em>. XXIX International Congress of Audiology, Hong Kong, 8-12 June 2008. [Invited presentation]</td>
</tr>
</tbody>
</table>


32: Cowan R. New Directions In Technology. Audiology Australia National Conference, Canberra, May 2008 [Invited presentation]

33: Cowan R. Residual hearing matters – hearing preservation with the Contour Advance electrode. XXIX International Congress of Audiology, Hong Kong, June 2008. [Invited presentation]


52: Vandeli AE. A “pitch” on the coding of melody in CIs. 2nd International Music and CI Symposium, Zurich, 7-8 February 2008. [Invited presentation]


<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AO</td>
<td>Officer of the Order of Australia</td>
</tr>
<tr>
<td>ACE</td>
<td>Advanced Combination Encoders</td>
</tr>
<tr>
<td>ASIC</td>
<td>Australian Securities and Investment Commission</td>
</tr>
<tr>
<td>BEI</td>
<td>Bionic Ear Institute</td>
</tr>
<tr>
<td>CAPD</td>
<td>Central Auditory Processing Disorders</td>
</tr>
<tr>
<td>CASALA</td>
<td>Computer Aided Speech And Language Assessment software</td>
</tr>
<tr>
<td>CI</td>
<td>Cochlear Implant</td>
</tr>
<tr>
<td>CRC</td>
<td>Cooperative Research Centre</td>
</tr>
<tr>
<td>CRC HEAR</td>
<td>Cooperative Research Centre for Cochlear Implant and Hearing Aid Innovation</td>
</tr>
<tr>
<td>Di-El™</td>
<td>Diary of Early Language</td>
</tr>
<tr>
<td>FAL</td>
<td>Francis Abourizk Lightowlers</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HEARNet</td>
<td>Hearing Education and Research Network</td>
</tr>
<tr>
<td>Hybrid-L</td>
<td>Hybrid long electrode array</td>
</tr>
<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>MEG</td>
<td>Magnetoencephalographic imager</td>
</tr>
<tr>
<td>MRA</td>
<td>Modiolar research array</td>
</tr>
<tr>
<td>NAL</td>
<td>National Acoustic Laboratories</td>
</tr>
<tr>
<td>NH&amp;MRC</td>
<td>National Health and Medical Research Council of Australia</td>
</tr>
<tr>
<td>PhD</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>QC</td>
<td>Queens Counsel</td>
</tr>
<tr>
<td>RVEEH</td>
<td>Royal Victorian Eye and Ear Hospital</td>
</tr>
<tr>
<td>SCIC</td>
<td>Sydney Cochlear Implant Centre</td>
</tr>
<tr>
<td>SD</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>SEM</td>
<td>Spectrographic electron microscopy</td>
</tr>
<tr>
<td>SME</td>
<td>Small-to-Medium Enterprise</td>
</tr>
<tr>
<td>SoundShield™</td>
<td>Sound protection algorithms and technology</td>
</tr>
<tr>
<td>SPEAK</td>
<td>Spectral Peaks sound coding strategy</td>
</tr>
<tr>
<td>SPEAR3</td>
<td>Speech Research System</td>
</tr>
<tr>
<td>SRL</td>
<td>Speech Referenced Limiting</td>
</tr>
<tr>
<td>Vicdeaf</td>
<td>Victorian Deaf Society</td>
</tr>
<tr>
<td>VISTA</td>
<td>Visiting Implant Specialists to Australia</td>
</tr>
</tbody>
</table>
CONTENTS
Directors’ Report →44
Income Statement →49
Balance Sheet →50
Statements of Recognised Income and Expense →51
Statements of Cash Flows →52
Notes to the Financial Statements →53
Directors’ Declaration →64
Independent Auditor’s Report →65
Auditor’s Independence Declaration →66
DIRECTORS’ REPORT
FOR THE PERIOD ENDED 30 JUNE 2008


1: DIRECTORS

The HEARing CRC Ltd was established for the purposes of managing and conducting the activities of the Hearing Cooperative Research Centre, established and funded under the Commonwealth of Australia Cooperative Research Centres Program.

The HEARing CRC Ltd is established and operates under a Members Agreement, whereby each of the five Core Members (namely Australian Hearing, Cochlear Ltd, Macquarie University, Siemens Hearing Instruments Australia and The University of Melbourne) have rights to appoint a nominee Director to the Board.

The Directors of the Company at any time during or since the end of the reporting period are:

Richard Searby
AO QC MA(Oxon) HonLLD(Deakin)
Chairman
Independent

Robert Cowan
BSc (Hons) MBA PhD(Melb) DipAud GrCertHealth Economics GrDipTechMgt FAudSA(CCP) MAICD
Director and Chief Executive Officer

Robin Evans
BE PhD(Newcastle)
Director
(nominee Director – University of Melbourne)

Anthea Green
BA
Director
(nominee Director – AHS)

Kathryn Greiner
AO BSocWork
Director
(nominee Director – AHS)

Neville Mitchell
BCom CA(SA) CA
Director
(nominee Director – Cochlear)

Jim Piper
BSc(Hons) PhD(Otago)
Director
(nominee Director – Macquarie University)

Barry Roberts
FCPA FCIS
Director
(nominee Director – Siemens)

Note: the biographies of Directors, included in the Annual Report approved by the Members at the Annual General Meeting and forming part of this report, have been provided on pages 16-17 of this report.
2: COMPANY SECRETARY

The Company Secretary as at 30 June 2008 was Jennifer Lightowlers, a principal partner of Francis Abourizk Lightowlers (FAL). FAL provides specialist legal and commercial contract advice to the Company.

Ms Lightowlers resigned as Company Secretary and Mr Lorenz Senn was appointed as Company Secretary on 1 September 2008. Mr Senn is a Certified Practicing Accountant (CPA), holds qualifications in accounting, computing and administration and has held senior positions in both industry and government funded enterprises in a career spanning over 30 years.

3: DIRECTORS’ MEETINGS

The number of Directors’ meetings (including meetings of committees of Directors) and number of meetings attended by each of the Directors of the Company during the financial reporting period are as shown in the following table:

Table of Meetings

<table>
<thead>
<tr>
<th>DIRECTOR</th>
<th>BOARD OF DIRECTORS</th>
<th>FINANCE AND AUDIT COMMITTEE</th>
<th>NOMINATIONS AND APPOINTMENTS COMMITTEE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Richard Searby – Chairman</td>
<td>7</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Robert Cowan</td>
<td>7</td>
<td>7</td>
<td>n/a</td>
</tr>
<tr>
<td>Barry Roberts</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Robin Evans</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Kathryn Greiner (appointed Nov 2008)</td>
<td>0</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Anthea Green (resigned Sept 2008)</td>
<td>5</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Neville Mitchell</td>
<td>6</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Jim Piper</td>
<td>6</td>
<td>7</td>
<td>n/a</td>
</tr>
</tbody>
</table>

A: Number of meetings attended
B: Number of meetings held during the time the director held office during the year
4: CORPORATE GOVERNANCE

The Board of Directors is accountable to the Commonwealth and the Members for the governance, management and control of the business and affairs of the Company. Its seven Directors comprise an independent chair, nominees of each or the five Core Members to the HEARing CRC (Australian Hearing, Cochlear Ltd, Siemens, Macquarie University and the University of Melbourne) and its Chief Executive Officer (CEO).

The HEARing CRC operates under the terms and guiding doctrines of its Constitution, the Members Agreement for the establishment and operation of the Hearing Cooperative Research Centre between each of the individual Members and the HEARing CRC Ltd, and the agreement between the Commonwealth of Australia and the HEARing CRC Ltd (Commonwealth Agreement). The HEARing CRC follows good practice as recommended by ASIC corporate governance practices.

To assist the Board in fulfilling its duties, it has established two committees: (1) Finance and Audit and (2) Nominations and Appointments. Details of each of these committees are stated below. The day-to-day management of the Company has been delegated to the CEO and through him, the Management Team.

4.1: FINANCE AND AUDIT COMMITTEE

The Finance and Audit Committee assists the Board by providing oversight of the financial operations and affairs of the Company. This Committee also oversees the relationship with the external auditor, and the process of identification and management of business, commercial and financial risks. For the reporting period this committee met six times and the members’ attendance record is disclosed in the table of meetings (on page 45). It is Company practice that the CEO is in attendance for all meetings.

The members of the Finance and Audit Committee during the period were:

Mr Barry Roberts (Chair)
Prof Rob Evans
Ms Anthea Green (resigned September 2008)
Mr Neville Mitchell (appointed November 2008)
Dr Richard Searby AO QC (ex officio)

4.2: NOMINATIONS AND APPOINTMENTS COMMITTEE

The Nominations and Appointments Committee assists the Board by making recommendations on the appointment and remuneration of Directors to the Boards of the HEARing CRC and HearWorks Pty Ltd. If required, this Committee also assists in the appointment of a Chairman, or CEO, and in making recommendations on the remuneration of these officers. For the reporting period this committee met 3 times and the members’ attendance record is disclosed in the table of meetings (on page 45).

The members of the Nominations and Appointments Committee during the year were:

Ms Anthea Green (Chair) (resigned September 2008)
Ms Kathryn Greiner AO (appointed November 2008)
Mr Barry Roberts
Dr Richard Searby AO QC (ex officio)

4.3: RISK MANAGEMENT

Oversight of the risk management system

The Board oversees the establishment, implementation and annual review of the Company’s Risk Management System, coordinated through the Finance and Audit Committee. The Chief Executive Officer and the Finance Manager have declared, in writing to the Board, that the financial reporting, risk management and associated compliance and controls have been assessed and found to be operating efficiently and effectively. A full review of risk has been completed within the past two years and appropriate insurances put in place to deal with assessable risks. A further review is to be undertaken in the next twelve months.

4.4: COMMUNICATION WITH MEMBERS

The Company’s Members have met on two occasions during the reporting period for planning and reviewing the Company’s establishment and activities, these occurring in October 2007 and February 2008.

Informal communication with Members occurs on a regular basis by means of an integrated email network and by regular face-to-face meetings with the CEO. A travel budget for this activity has been provided.

An internal newsletter publication is provided to the Members on a semi-regular basis and a full annual report of activities is provided to the Members each year.

During the financial year, the HEARing CRC launched the “Hearing Education and Research Network of Australia” (HEARnet) as an unincorporated association. The primary purposes of HEARnet is to increase communication amongst the Members, and with other research agencies and the public who have an interest in hearing research. This is a primary technology transfer activity which will assist in ensuring that the wider community is informed of developments of HEARing CRC research and increases the potential that clinical developments will achieve widespread uptake and use.
5: PRINCIPAL ACTIVITIES

The principal activities of the HEARing CRC are to undertake collaborative research into hearing loss prevention and mitigation leading to innovative products, processes and services that address the economic impact of hearing loss on the Australian economy. Through education and commercialisation of research findings, the HEARing CRC and its Members aim to reduce the incidence of hearing loss and increase the effectiveness of treatments for hearing loss and associated disorders.

Its research program comprises a range of collaborative research projects in the following areas:

- Biomolecular/Genetic/Physiological solution to hearing loss;
- Intelligent Sound Processing;
- Integrated Bio-engineering; and
- Clinical Tools, Services and Techniques.

6: OPERATING AND FINANCIAL REVIEW

Subsequent to a successful application for funding under the Cooperative Research Centres of the Commonwealth Government of Australia, HEARing CRC Ltd was incorporated as a company limited by guarantee on 18 January 2007. The agreement between the Commonwealth and the HEARing CRC is for 7 years, commencing 1 July 2007. The gap between the commencement of the Commonwealth funding term (1 July 2007) and the signing of the Commonwealth CRC Agreement (December 2007) was due to unexpected delays in finalising and executing the Members Agreement and other corollary agreements. Consequently, whilst some research activities, primarily those that transitioned from the previous CRC HEAR were fully operational as at 1 July 2007, the commencement of other projects of the HEARing CRC has been delayed, with some yet to commence in the year to 30 June 2008.

The delayed commencement of the HEARing CRC Activities is reflected in the operational and financial results for the period to 30 June 2008. The Income for the period includes all cash contributions of the Members to the HEARing CRC and we take this opportunity to thank these participants. The income also includes a cash grant from the New South Wales Government Office of Medical Science and Research and we take the opportunity to thank the NSW Government for its support. The Commonwealth CRC Program grant and tied cash contributions from Members, although recognised in full for the year, are treated as partly deferred income in recognition of the delays in commencing project activities noted above. NSW Government grant funds were spent in total for the period as per the terms of the NSW grant agreement. Total Income for the Year was $17.322 million, which is matched by expenditure, resulting in a $0 balance for the period.

Approval has been obtained from the Australian Securities and Investment Commission for an extended period of reporting and for a delay in the holding of the first Annual General Meeting.

7: ENVIRONMENTAL REGULATIONS

The Company’s operations are not subject to any significant environmental regulation under either Commonwealth or State legislation. However, the Board believes that the Company has adequate systems in place for the management of its environmental obligations and requirements and is not aware of any breach of those requirements as they apply to the Company.

8: DIVIDENDS

The HEARing CRC is limited by guarantee and has no share capital. The Directors of the HEARing CRC are precluded by the Company’s Constitution from declaring a dividend.

9: EVENTS SUBSEQUENT TO REPORTING DATE

The Directors are not aware of any matters or circumstance, subsequent to the reporting period that has significantly affected the activities of the Company, its performance and state of affairs.
10: LIKELY DEVELOPMENTS

The HEARing CRC has applied to the Australian Taxation Office (ATO) for recognition as a tax exempt entity and the Company is currently awaiting a ruling. For financial reporting purposes, the Company has been treated as a not-for-profit entity in line with its objectives of maximising hearing health and fostering industry and research collaboration.

The HEARing CRC has proposed to the Members to amend its Constitution to allow for the appointment of Alternate Directors to its Board and to make other minor amendments for consistency with the HEARing CRC Members Agreement.

The HEARing CRC has also clarified the structure of its intellectual property trusts and management arrangements with its commercial arm HearWorks Pty Ltd. In respect of this, HEARing CRC has proposed to the Members to revoke the appointment of HearWorks Pty Ltd as the Trustee of the IP Trust and to appoint Hear IP Pty Ltd as Trustee. Hear IP Pty Ltd has been incorporated for the purpose of acting as Trustee for the HEARing CRC IP Trust and will operate under the Trust Deed signed by the HEARing CRC, its Members and the Trustee (initially HearWorks).

11: INDEMNIFICATION AND INSURANCE OF OFFICERS

The HEARing CRC had and continues to hold Directors’ and Officers’ Insurance in respect to these persons whilst legitimately performing their duties.

Insurance premiums

Since the end of the previous financial year, the Company has paid insurance premiums of $14,369 in respect of Directors’ and Officers’ liability and legal expenses’ insurance contracts, for current and former Directors and officers.

12: AUDITOR’S INDEPENDENCE DECLARATION

The auditor’s independence declaration is set out on page 66 and forms part of the Directors’ Report for reporting period ended 30 June 2008.

13: Rounding Off

The Company is of a kind referred to in ASIC Class Order 98/100 dated 10 July 1998 and in accordance with that Class Order amounts in the financial report and Directors’ Report have been rounded off to the nearest thousand dollars, unless otherwise stated.
INCOME STATEMENT
FOR THE PERIOD ENDED 30 JUNE 2008

NOTE* 18 JAN ’07 TO 30 JUN ’08

| INCOME | 7 | 17,322 |
| EXPENDITURE | | |
| Contributions – In-kind by Participating parties | | [13,684] |
| Contributions to Participating parties for salaries | | (2,462) |
| Research consumables | | (638) |
| Consultants and seconded staff | | (162) |
| Other | 7c | (417) |

SURPLUS/(DEFICIT) FROM OPERATING ACTIVITIES | | [41] |
| Finance income | 7b | 41 |

NET FINANCE INCOME | 41 |

SURPLUS/(DEFICIT) BEFORE INCOME TAX | -- |
| Income tax expense | -- |

SURPLUS/(DEFICIT) FOR THE PERIOD | -- |

*The notes on pages 53 to 63 are an integral part of these financial statements.
## BALANCE SHEET

**AS AT 30 JUNE 2008**

<table>
<thead>
<tr>
<th>NOTE*</th>
<th>AS AT 30 JUN '08</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ ('000)</td>
</tr>
</tbody>
</table>

### ASSETS

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Amount ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>9a</td>
<td>3,777</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>8</td>
<td>745</td>
</tr>
</tbody>
</table>

**TOTAL CURRENT ASSETS**

4,522

**TOTAL ASSETS**

4,522

### LIABILITIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Amount ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade and other payables</td>
<td>12</td>
<td>2,251</td>
</tr>
<tr>
<td>Deferred income</td>
<td>11</td>
<td>2,271</td>
</tr>
</tbody>
</table>

**TOTAL CURRENT LIABILITIES**

4,522

**TOTAL LIABILITIES**

4,522

### NET ASSETS

--

### EQUITY

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained earnings</td>
<td>--</td>
</tr>
</tbody>
</table>

**TOTAL EQUITY**

--

*The notes on pages 53 to 63 are an integral part of these financial statements.*
### STATEMENT OF RECOGNISED INCOME AND EXPENSE

**FOR THE PERIOD ENDED 30 JUNE 2008**

18 JAN '07
TO 30 JUN '08

<table>
<thead>
<tr>
<th></th>
<th>$ ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME AND EXPENSE RECOGNISED DIRECTLY IN EQUITY</strong></td>
<td>--</td>
</tr>
<tr>
<td><strong>SURPLUS FOR THE PERIOD</strong></td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL RECOGNISED INCOME AND EXPENSE FOR THE PERIOD</strong></td>
<td>--</td>
</tr>
</tbody>
</table>

*The notes on pages 53 to 63 are an integral part of these financial statements.*
## STATEMENT OF CASH FLOWS
FOR THE PERIOD ENDED 30 JUNE 2008

<table>
<thead>
<tr>
<th></th>
<th>$ ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CASH FLOWS FOR OPERATING ACTIVITIES</strong></td>
<td></td>
</tr>
<tr>
<td>➤ Cash receipts from Members and government</td>
<td>5,160</td>
</tr>
<tr>
<td>➤ Cash paid to suppliers and employees</td>
<td>(1,424)</td>
</tr>
<tr>
<td>➤ Cash generated from all activities</td>
<td>3,736</td>
</tr>
<tr>
<td>➤ Interest received</td>
<td>41</td>
</tr>
<tr>
<td><strong>NET CASH FROM (USED IN) OPERATING ACTIVITIES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3,777</td>
</tr>
<tr>
<td>➤ Net increase (decrease) in cash and cash equivalents</td>
<td>3,777</td>
</tr>
<tr>
<td>➤ Cash and cash equivalents as at 18 January 2007</td>
<td>-</td>
</tr>
<tr>
<td><strong>CASH AND CASH EQUIVALENTS AT 30 JUNE</strong></td>
<td>9b</td>
</tr>
<tr>
<td></td>
<td>3,777</td>
</tr>
</tbody>
</table>

*The notes on pages 53 to 63 are an integral part of these financial statements.*
NOTES TO THE FINANCIAL STATEMENTS

1: REPORTING ENTITY
The financial report covers HEARing CRC Ltd as an individual entity. The Company is limited by guarantee, incorporated and domiciled in Australia.

The reporting period is 18 January 2007 (the date of incorporation) to 30 June 2008. Approval has been obtained from the Australian Securities and Investment Commission for an extended period of reporting.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future periods affected.

2: BASIS OF PREPARATION

(a) STATEMENT OF COMPLIANCE
The financial report is a general purpose financial report which has been prepared in accordance with Australian Accounting Standards (AAS) (including Australian Interpretations) adopted by the Australian Accounting Standards Board (AASB) and the Corporations Act 2001.

The financial statements were approved by resolution of the Board of Directors on 11 December 2008.

(b) BASIS OF MEASUREMENT
The financial statements have been prepared on the historical cost basis except for the following:

> financial instruments at fair value through profit or loss are measured at fair value.

The methods used to measure fair values are discussed further in note 4.

(c) FUNCTIONAL AND PRESENTATION CURRENCY
These financial statements are presented in Australian dollars, which is the Company’s functional currency.

The Company is of a kind referred to in ASIC Class Order 98/100 dated 10 July 1998 and in accordance with that Class Order, all financial information presented in Australian dollars has been rounded to the nearest thousand unless otherwise stated.

(d) USE OF ESTIMATES AND JUDGEMENTS
The preparation of financial statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

3: SIGNIFICANT ACCOUNTING POLICIES

(e) INCOME TAX
The Company is currently awaiting approval for tax exemption status under Division 50-B of the Income Tax Assessment Act 1997 as a not-for-profit entity. The Company has prepared these accounts based on this approval being granted, as its objectives are to maximise hearing health outcomes and to foster research collaboration.

(f) FOREIGN CURRENCY TRANSACTIONS
Transactions in foreign currencies are translated to the respective functional currencies of the Company at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate at that date. The foreign currency gain or loss on monetary items is the difference between amortised cost in the functional currency at the beginning of the period, adjusted for effective interest and payments during the period, and the amortised cost in foreign currency translated at the exchange rate at the end of the period. Foreign currency differences arising on retranslation are recognised in income statement.

(g) FINANCIAL INSTRUMENTS

Non-derivative financial instruments
Non-derivative financial instruments comprise trade and other receivables, cash and cash equivalents, deferred income and trade and other payables.

Non-derivative financial instruments are initially measured at cost on trade date, which includes transaction costs, when the related contractual rights or obligations exist. Subsequent to initial recognition these financial instruments are measured as described as follows.
A financial instrument is recognised if the Company becomes a party to the contractual provisions of the instrument. Financial assets are derecognised if the Company’s contractual rights to the cash flows from the financial assets expire or if the Company transfers the financial asset to another party without retaining control or substantially all risks and rewards of the asset. Regular way purchases and sales of financial assets are accounted for at trade date, i.e. the date that the Company commits itself to purchase or sell the asset. Financial liabilities are derecognised if the Company’s obligations specified in the contract expire or are discharged or cancelled.

Cash and cash equivalents comprise cash balances and call deposits.

Accounting for finance income is discussed in note 3(l).

(h) IMPAIRMENT OF ASSETS
At the reporting date the Company reviews the carrying values of its assets to determine whether there is any indication that those assets have been impaired. If such an indication exists, the recoverable amount of the assets, being the higher of the asset’s fair value less costs to sell and value in use, is compared to the asset’s carrying value. Any excess of the asset’s carrying value over its recoverable amount is recognised in the income statement.

(i) RESEARCH AND DEVELOPMENT
Expenditure on research and development activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in the year when incurred.

(j) REVENUE
Revenue from services rendered is recognised in proportion to the stage of completion of the transaction at the reporting date.

Interest income and other sundry income are brought to account when the Company controls a right relating to the consideration payable.

Income arising from cash contributions received from the Members is recognised when the Company is in control of or has the right to receive the contributions.

Government grants are recognised as revenue when the entity obtains control over the assets comprising the contribution. Where the Company considers the funds to be reciprocal in nature, the grant is treated as deferred income. This income is tied to specific research and other activities. All government grants are initially recorded as deferred income until such time as the Company complies with the conditions associated with the grants.

In-kind contributions
In-kind contributions from Members are brought to account as revenue and expenditure incurred in accordance with AASB 1004. These in-kind contributions are measured at fair value based on the dollar value provided by each participant in their reporting to the Company.

(k) GOODS AND SERVICES TAX
Revenue, expenses and assets are recognised net of the amount of goods and services tax (GST), except where the amount of GST incurred is not recoverable from the taxation authority. In these circumstances, the GST is recognised as part of the cost of acquisition of the asset or as part of the expense.

Receivables and payables are stated with the amount of GST included. The net amount of GST recoverable from, or payable to, the ATO is included as a current asset or liability in the balance sheet.

Cash flows are included in the statement of cash flows on a gross basis. The GST components of cash flows arising from investing and financing activities which are recoverable from, or payable to, the ATO are classified as operating cash flows.

(l) FINANCE INCOME AND EXPENSES
Finance income comprises interest income on funds invested. Interest income is recognised as it accrues in the income statement.

(m) NEW STANDARDS AND INTERPRETATIONS NOT YET ADOPTED
The following standards, amendments to standards and interpretations have been identified as those which may impact the entity in the period of initial application. They are available for early adoption at 30 June 2008, but have not been applied in preparing this financial report:

- Revised AASB 101 Presentation of Financial Statements introduces as a financial statement (formerly “primary” statement) the “statement of comprehensive income”. The revised standard does not change the recognition, measurement or disclosure of transactions and events that are required by other AASBs. The revised AASB 101 will become mandatory for the Company’s 30 June 2010 financial statements. The Company has not yet determined the potential effect of the revised standard on the Company’s disclosures.
4: DETERMINATION OF FAIR VALUES

A number of the Company’s accounting policies and disclosures require the determination of fair value, for both financial and non-financial assets and liabilities. Fair values have been determined for measurement and/or disclosure purposes based on the following methods. Where applicable, further information about the assumptions made in determining fair values is disclosed in the notes specific to that asset or liability.

(a) TRADE AND OTHER RECEIVABLES

The fair value of trade and other receivables is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date.

5: FINANCIAL RISK MANAGEMENT

OVERVIEW

The Company has exposure to the following risks from their use of financial instruments:

(a) credit risk

(b) liquidity risk

(c) market risk.

This note presents information about the Company’s exposure to each of the above risks, their objectives, policies and processes for measuring and managing risk, and the management of capital. Further quantitative disclosures are included throughout this financial report.

The Board of Directors has overall responsibility for the establishment and oversight of the risk management framework. The Board has established the Finance and Audit Committee, which is responsible for developing and monitoring risk management policies. The Committee reports regularly to the Board of Directors on its activities.

Risk management policies have been established to identify and analyse the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company’s circumstances.

(a) CREDIT RISK

Credit risk is the risk of financial loss to the Company if a customer fails to meet its contractual obligations, and arises principally from the Company’s receivables from customers and investment securities.

Trade and other receivables

The Company’s credit exposure throughout the year was primarily (approximately 75%) to the Government followed by some of its research participants (24%) with which it has a close working relationship. The majority of the credit exposure is limited to Australia. The Finance and Audit Committee and management monitor the credit exposure throughout the year.

Investments

The Company limits its exposure to credit risk by investing only in liquid securities. All its securities have throughout the year been held with an Australian Bank.

(b) LIQUIDITY RISK

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due. The Company has all cash investments which it can draw on when required. The Company’s approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Company’s reputation.

The Company has no overdraft facilities or loans taken out at year end.

(c) MARKET RISK

Market risk is the risk that changes in market prices, such as interest rates, will affect the Company’s income or the value of its holdings of financial instruments. The Company has limited market risk as it does not directly trade and holds all investments in cash. The Company’s interest rate risk all relate to variable rates.

6: CAPITAL MANAGEMENT

The Board’s policy is to maintain an adequate capital base which ensures market and creditor confidence and to sustain future development of the Company’s activities. There were no changes in the Company’s approach to capital management during the year.
7: INCOME AND EXPENSES

(a) INCOME

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government CRC Program Grants</td>
<td>1,955</td>
</tr>
<tr>
<td>Contribution from Members - cash contributions</td>
<td>1,408</td>
</tr>
<tr>
<td>Contributions from Members - in-kind contributions</td>
<td>13,684</td>
</tr>
<tr>
<td>Other income</td>
<td>275</td>
</tr>
<tr>
<td><strong>TOTAL INCOME</strong></td>
<td><strong>17,322</strong></td>
</tr>
</tbody>
</table>

(b) FINANCE INCOME

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td><strong>NET FINANCE INCOME</strong></td>
<td><strong>41</strong></td>
</tr>
</tbody>
</table>

(c) OTHER EXPENSES

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal</td>
<td>134</td>
</tr>
<tr>
<td>Travel</td>
<td>75</td>
</tr>
<tr>
<td>Audit</td>
<td>30</td>
</tr>
<tr>
<td>Other</td>
<td>178</td>
</tr>
<tr>
<td><strong>TOTAL OTHER EXPENSES</strong></td>
<td><strong>417</strong></td>
</tr>
</tbody>
</table>

(d) PERSONNEL EXPENSES

There were no personnel costs associated with wages and salaries during the reporting period, with the exception of costs incurred in relation to recruitment and other activities of key management personnel which have been disclosed as other expenses in note 7(c) or contributions to participating parties for salaries in the Income Statement.
# 8: TRADE AND OTHER RECEIVABLES

<table>
<thead>
<tr>
<th>CURRENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade receivables</td>
<td>609</td>
</tr>
<tr>
<td>Other receivables due to related parties</td>
<td>136</td>
</tr>
<tr>
<td><strong>TOTAL RECEIVABLES</strong></td>
<td><strong>745</strong></td>
</tr>
</tbody>
</table>

The Company’s exposure to credit risk and impairment losses related to trade and other receivables are disclosed in note 13.

# 9 (a): CASH AND CASH EQUIVALENTS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank balances</td>
<td>658</td>
</tr>
<tr>
<td>Call deposits</td>
<td>3,119</td>
</tr>
<tr>
<td><strong>CASH AND CASH EQUIVALENTS IN THE STATEMENT OF CASH FLOWS</strong></td>
<td><strong>3,777</strong></td>
</tr>
</tbody>
</table>

The Company’s exposure to interest rate risk and a sensitivity analysis for financial assets are disclosed in note 13.

# 9 (b): RECONCILIATION OF CASH FLOWS FROM OPERATING ACTIVITIES

<table>
<thead>
<tr>
<th>OPERATING PROFIT BEFORE CHANGES IN WORKING CAPITAL AND PROVISIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in trade and other receivables</td>
<td>(745)</td>
</tr>
<tr>
<td>Change in trade and other payables</td>
<td>2,251</td>
</tr>
<tr>
<td>Change in deferred government grant</td>
<td>2,271</td>
</tr>
<tr>
<td><strong>NET CASH FROM OPERATING ACTIVITIES</strong></td>
<td><strong>3,777</strong></td>
</tr>
</tbody>
</table>
## 10: CAPITAL RESERVES SHARE CAPITAL

On issue at 18 January 2007 and 30 June 2008

*The Company is a public company limited by guarantee.*

<table>
<thead>
<tr>
<th>2008</th>
<th>$ (’000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>--</td>
</tr>
</tbody>
</table>

## 11: DEFERRED INCOME

Unexpended government grants

The Company has utilised revenue from the Members’ cash contributions, the NSW OSMR grant and from bank interest to fund Activities as agreed under the HEARing CRC Members Agreement and initial Operational Plan. Commonwealth CRC Program grants have been applied to the Activities as agreed under the HEARing CRC Commonwealth Agreement (and its associated Schedules), and the unexpended government grants represent Activities not yet undertaken.

*The Company’s exposure to liquidity risk is disclosed in note 13.*

<table>
<thead>
<tr>
<th>2008</th>
<th>$ (’000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,271</td>
</tr>
</tbody>
</table>

## 12: TRADE AND OTHER PAYABLES

- Trade payables 844
- Other payables 1,378
- Other payables owed to related parties 29

**TOTAL** 2,251

*The Company’s exposure to liquidity risk related to trade and other payables is disclosed in note 13.*
13: FINANCIAL INSTRUMENTS

The Company’s financial instruments consist of cash held in banks, accounts receivable and payable. During the reporting period it did not trade in and as at 30 June 2008 had no exposure to derivative instruments.

CREDIT RISK

(a) Exposure to credit risk

The carrying amount of the company’s financial assets represents the maximum credit exposure. The company’s maximum exposure to credit risk at the reporting date was:

<table>
<thead>
<tr>
<th>2008</th>
<th>$ ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FINANCIAL ASSETS</strong></td>
<td></td>
</tr>
<tr>
<td>Receivables</td>
<td>745</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>3,777</td>
</tr>
<tr>
<td><strong>TOTAL FINANCIAL ASSETS</strong></td>
<td>4,522</td>
</tr>
</tbody>
</table>

None of the Company’s receivables are past due and no impairment losses were recognised at 30 June 2008.

The Company’s exposure to credit for trade receivables at the reporting date by geographic region was:

<table>
<thead>
<tr>
<th>2008</th>
<th>$ ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>745</td>
</tr>
<tr>
<td><strong>TOTAL RECEIVABLES</strong></td>
<td>745</td>
</tr>
</tbody>
</table>

The Company’s most significant customer outstanding amount is $189,750 as at 30 June 2008. This debt was settled prior to issue of these financial statements.
13: FINANCIAL INSTRUMENTS (cont.)

LIQUIDITY RISK

The Company’s policy is that all contracted cash flows are paid within 6 months or less.

<table>
<thead>
<tr>
<th></th>
<th>CARRYING AMOUNT</th>
<th>CONTRACTUAL CASH FLOWS</th>
<th>6 MONTHS OR LESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ ('000)</td>
<td>$ ('000)</td>
<td>$ ('000)</td>
</tr>
<tr>
<td>NON-DERIVATIVE FINANCIAL LIABILITIES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payables</td>
<td>2,251</td>
<td>2,251</td>
<td>2,251</td>
</tr>
<tr>
<td>Deferred income</td>
<td>2,271</td>
<td>2,271</td>
<td>2,271</td>
</tr>
<tr>
<td>NON-DERIVATIVE TOTAL FINANCIAL LIABILITIES</td>
<td>4,522</td>
<td>4,522</td>
<td>4,522</td>
</tr>
</tbody>
</table>

MARKET RISK

Interest rate risk

The Company does not hold any fixed rate financial assets and liabilities. All interest is applied to the funding of the Activities only, and is therefore not “retained” by the Company if unspent.

Investments in short-term receivables and payables are not exposed to interest rate risk.

As at reporting date, the interest rate profile of the Company’s interest-bearing financial instruments was:
**Cash flow sensitivity analysis for variable rate instruments**

A change of 100 basis points in interest rates at the reporting date would have increased [decreased] equity and the surplus or deficit by the amount shown below. The analysis assumes that all other variables remain constant.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>-1%</td>
<td>+1%</td>
<td>-1%</td>
<td>+1%</td>
<td>-1%</td>
<td>+1%</td>
</tr>
<tr>
<td></td>
<td>SURPLUS</td>
<td>EQUITY</td>
<td>SURPLUS</td>
<td>EQUITY</td>
<td>SURPLUS</td>
<td>EQUITY</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL ASSETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable rate instruments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>3,777</td>
<td>(377)</td>
<td>(377)</td>
<td>377</td>
<td>377</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total increase / (decrease)</td>
<td>(377)</td>
<td>(377)</td>
<td>377</td>
<td>377</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FAIR VALUES**

**Fair values versus carrying amounts**

The fair values of financial assets and liabilities, together with the carrying amounts shown in the balance sheet, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>CARRYING AMOUNT 2008</th>
<th>FAIR VALUE 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ ('000)</td>
<td>$ ('000)</td>
</tr>
<tr>
<td>Financial assets</td>
<td>745</td>
<td>745</td>
</tr>
<tr>
<td>Receivables</td>
<td>3,777</td>
<td>3,777</td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>4,522</td>
<td>4,522</td>
</tr>
<tr>
<td>TOTAL FINANCIAL ASSETS</td>
<td>4,522</td>
<td>4,522</td>
</tr>
<tr>
<td>Financial liabilities</td>
<td>2,251</td>
<td>2,251</td>
</tr>
<tr>
<td>Payables</td>
<td>2,271</td>
<td>2,271</td>
</tr>
<tr>
<td>Deferred income</td>
<td>4,522</td>
<td>4,522</td>
</tr>
<tr>
<td>TOTAL FINANCIAL LIABILITIES</td>
<td>4,522</td>
<td>4,522</td>
</tr>
</tbody>
</table>
14: RELATED PARTIES

(a) INDIVIDUAL DIRECTORS AND EXECUTIVES COMPENSATION DISCLOSURES
During the reporting period, the following were key governance and management personnel of the Company.

Non-Executive Directors:
Dr Richard Searby AC, QC
Prof Rob Evans
Ms Anthea Green
Mr Neville Mitchell
Prof Jim Piper
Mr Barry Roberts

Executive Directors:
A/Prof Robert Cowan

Compensation paid to individual Directors and executives was as follows:

<table>
<thead>
<tr>
<th></th>
<th>2008 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term employee benefits</td>
<td>217</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>217</strong></td>
</tr>
</tbody>
</table>

Key management personnel costs are listed under “Other” and “Contributions to Participating parties for salaries” in the Income Statement.

Apart from the details disclosed in this note, no director has entered into a material contract with the Company for this financial period and there were no material contracts involving Directors’ interests existing at the end of the financial reporting period.

(b) ASSOCIATES – HEARWORKS PTY LTD
During the financial period ended 30 June 2008, all related parties’ transactions were made at market prices and in commercial terms. Outstanding balances at year-end were unsecured, interest free and settlement occurs in cash. No guarantees were provided or received for any related party receivable or payable.

<table>
<thead>
<tr>
<th></th>
<th>2008 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income - cash contribution to HEARing CRC (Note 7 “Contributions from Members – cash contributions”)</td>
<td>300</td>
</tr>
<tr>
<td>Trade receivables - owing (refer Note 8)</td>
<td>136</td>
</tr>
<tr>
<td>Trade payables - owed (refer Note 12)</td>
<td>29</td>
</tr>
</tbody>
</table>
15: SUBSEQUENT EVENT
No matters or circumstances have arisen since the end of the financial period which significantly affected or may significantly affect the operations of the company, the results of those operations or the state of affairs of the company in future financial years.

16: AUDITORS’ REMUNERATION

<table>
<thead>
<tr>
<th>2008</th>
<th>$ ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUDIT SERVICES</strong></td>
<td></td>
</tr>
<tr>
<td>Auditors of the Company</td>
<td></td>
</tr>
<tr>
<td><strong>KPMG AUSTRALIA:</strong></td>
<td></td>
</tr>
<tr>
<td>➔ Audit and review of financial reports</td>
<td>29</td>
</tr>
<tr>
<td>➔ Other regulatory audit services</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

17: MEMBERS GUARANTEE
The company is a company limited by guarantee. If the company is wound up each Member may be required to contribute a maximum of $1.00 towards meeting any outstanding obligations of the company. There were 24 Members of the company as at 30 June 2008.
In the opinion of the Directors of HEARing CRC Ltd (‘the Company’):

(a) the financial statements and notes set out on pages 49 to 63, are in accordance with the Corporations Act 2001, including:

(i) giving a true and fair view of the Company’s financial position as at 30 June 2008 and of its performance for the financial period commencing 18 January 2007 to 30 June 2008; and

(ii) complying with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Regulations 2001;

(b) there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

Signed in accordance with a resolution of the Directors:

Dated at Melbourne this 11th day of December 2008.

Richard Searby AO QC
Chairman

Dated at Melbourne this 11th day of December 2008.

A/Prof Robert Cowan
Chief Executive Officer

Dated at Melbourne this 11th day of December 2008.
INDEPENDENT AUDITOR’S REPORT TO THE MEMBERS OF THE HEARING CRC LIMITED

REPORT ON THE FINANCIAL REPORT

We have audited the accompanying financial report of HEARing CRC Ltd (the Company), which comprises the balance sheet as at 30 June 2008, and the income statement, statement of recognised income and expense and cash flow statement for the period 18 January 2007 to 30 June 2008, a summary of significant accounting policies and other explanatory notes 1 to 17 and the Directors’ Declaration set out on pages 53 to 64.

DIRECTORS’ RESPONSIBILITY FOR THE FINANCIAL REPORT

The Directors of the company are responsible for the preparation and fair presentation of the financial report in accordance with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Act 2001. This responsibility includes establishing and maintaining internal control relevant to the preparation and fair presentation of the financial report that is free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

AUDITOR’S RESPONSIBILITY

Our responsibility is to express an opinion on the financial report based on our audit. We conducted our audit in accordance with Australian Auditing Standards. These Auditing Standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

We performed the procedures to assess whether in all material respects the financial report presents fairly, in accordance with the Corporations Act 2001 and Australian Accounting Standards (including the Australian Accounting Interpretations), a view which is consistent with our understanding of the Company’s financial position and of its performance.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

INDEPENDENCE

In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001. We confirm that the independence declaration required by the Corporations Act 2001, provided to the Directors of HEARing CRC Ltd on 5 December 2008, would be unchanged if provided to the Directors as at the date of this auditor’s report.

AUDITOR’S OPINION

In our opinion:

(a) the financial report of HEARing CRC Ltd is in accordance with the Corporations Act 2001, including:

(i) giving a true and fair view of the Company’s financial position as at 30 June 2008 and of its performance for the period commencing 18 January 2007 to 30 June 2008; and

(ii) complying with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Regulations 2001.

KPMG

Donald Abell
Partner

Dated at Melbourne this 16th day of December 2008.
LEAD AUDITOR’S INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATIONS ACT 2001

To: the Directors of HEARing CRC Ltd

I declare that, to the best of my knowledge and belief, in relation to the audit for the period from 18 January 2007 to 30 June 2008 there have been:

(i) no contraventions of the auditor independence requirements as set out in the Corporations Act 2001 in relation to the audit; and

(ii) no contraventions of any applicable code of professional conduct in relation to the audit.

Donald Abell
Partner

Dated at Melbourne this 5th day of December 2008.
DEVELOPMENT OF KNOWLEDGE THROUGH COLLABORATION OF THE WALTER AND ELIZA HALL INSTITUTE FOR MEDICAL RESEARCH AND THE KIT-MACQUARIE BRAIN RESEARCH LABORATORY WILL LEAD TO THERAPEUTIC INTERVENTIONS FOR PREVENTION AND IMPROVED REMEDIATION OF HEARING LOSS, TINNITUS AND CENTRAL AUDITORY PROCESSING DISORDERS.