

A Machiavellian Spin

Political and corporate involvement with cell phone research in Australia

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“The roles of those who produce knowledge in academia and those stakeholders who have a financial interest in that knowledge should be kept separate and distinct”.¹

Sheldon Krimsky, 2003

“The establishment of a link between adverse health effects and electromagnetic energy (EME) could expose us to liability or negatively affect our operations”

Telstra Annual Report, 2004

Abstract

Australia has had a relatively long history of involvement in telecommunications health based standards setting and research through the Commonwealth Science and Industrial Research Organization (CSIRO). This organization was the peak body in this area until 2003 when the federal government removed it from any involvement with non-ionizing radiation research altogether and gave the task to the newly created Australian Centre for Radiofrequency Bioeffects Research (ACRBR). Central to these changes has been a marked shift in emphasis in research priorities away from independent research to a research effort mired in partisan conflicts of interest that ensured conformity with both federal government and industry policy on telecommunications.

Introduction

In March 2009 three Australian neurosurgeons, Drs. Vini Khurana², Charles Teo³ and Richard Bittar,⁴ wrote a ‘Letter to the Editor’ to the medical journal *Surgical Neurology*. Titled “Health risks of cell phone technology”, the letter expressed the neurosurgeons’ concerns over what they considered was a serious emerging public health risk from the ubiquitous use of the cell phone and the increasing evidence for harm, including brain and salivary gland tumours, male infertility, behavioral disturbances and electrosensitivity. The authors concluded by strongly recommending that children’s cell phone use should be restricted.⁵

Khurana and Teo, with co-authors Michael Kundi, Lennart Hardell and Michael Carlberg, have also written a peer-reviewed paper published in *Surgical Neurology* titled “Cell phones and brain tumors: a review including the long-term epidemiologic data”. This paper concludes that “there is adequate epidemiologic evidence to suggest a link between

¹ S. Krimsky, *Science in the Private Interest: Has the Lure of Profits Corrupted Biomedical Research?*, Rowman & Littlefield publishers, 2003, p. 227.

² The Canberra Hospital, Canberra, Australia.

³ Prince of Wales Private Hospital, New South Wales, Australia.

⁴ Royal Melbourne Hospital and the Alfred Hospital, Victoria, Australia.

⁵ V. Khurama, C. Teo, R. Bittar, ‘Health risks of cell phone technology’, Letter to the Editor, *Surgical Neurology*, http://www.brain-surgery.net.au/Publication_PDFs/SurgNeurLett.pdf, Accessed June 7, 2009.

prolonged cell phone usage and the development of an ipsilateral brain tumor” and “it is likely that neurosurgeons will see increasing numbers of primary brain tumors, both benign and malignant.”⁶

On previous occasions Khurana, Teo and Bittar have publicly expressed their concerns over what they were seeing in their surgeries. For example, Dr. Teo stated in a *60 Minutes* interview (April 3rd, 2009) that he was seeing a rise in the incidence of brain cancer and as a result the public should be informed as to all the potential causes of the disease. Teo said that he was “incredibly worried, depressed at the number of kids I’m seeing coming in with brain tumours....Just in the last three or four weeks I’ve seen nearly half a dozen kids with tumours which should have been benign and they’ve all been nasty, malignant brain tumours. We are doing something terribly wrong.”⁷ Khurana shares Teo’s concerns as he too is “seeing too many young people with such tumours”.⁸

Teo’s concerns are backed up by statistics from the UK that have found that brain tumours are now apparently the leading cause of childhood cancer mortality in the UK. While childhood leukaemia mortality had decreased 39% between the years 2001 to 2007, childhood brain tumour deaths had increased by 33% over the same period. In addition, according to a U.K charity, Brain Tumour Research, more children and adults under the age of 40 now die from brain tumours in the U.K. than from any other form of cancer and the incidence is increasing with some experts seeing a doubling of brain tumour cases over the past year.⁹

Concerns over an apparent increase in brain tumour incidence in young people also were raised in U.S. Congressional hearings in September 2008. Ronald Herberman, Director of the University of Pittsburgh Cancer Institute, testified that in his examination of government statistics the incidence of brain cancer has been increasing over the last ten years, particularly among 20-29 year-olds. Herberman pointed out that as the latency for brain tumours is more than ten years and if cell phone were responsible for the increase, brain tumour rates might not peak for at least another five years.¹⁰ At the congressional hearings both Herberman and David Carpenter, Director of the Institute for Health and Environment in Albany, N.Y., cited research findings by Lennart Hardell from Sweden that indicated people who started using cell phones before the age of 20 were five times more likely to develop a glioma, frequently a type of malignant brain tumour. According to Carpenter, “this observation is consistent with a large body of scientific studies that

⁶ V. Khurana, C. Teo, M. Kundi, L. Hardell, ‘Cell phones and brain tumors: a review including the long-term epidemiologic data’, *Surgical Neurology*, Vol. 72, No. 3, pp. 205-214, Sept. 2009.

⁷ 60 Minutes transcript, ‘Wake Up Call’ Reporter L. Bartlett, April 3, 2009, <http://sixtyminutes.ninensn.com.au/article.aspx?id=797215>, Accessed June 7, 2009

⁸ Correspondence with V. Khurana, July 5, 2009.

⁹ Brain Tumour Research (UK) Press Release, ‘Brain Tumours: Leading Cause of Cancer Death in Children’, April 28, 2009, http://braintumourresearch.org/images/stories/file/Microsoft%20Word%20-%20Press%20release%20-%20main%20-%20launch%2028_04_09.pdf, Accessed June 8, 2009

¹⁰ L. Slesin, ‘Are Brain Cancer Rates Rising Among Young Adults? Striking Increase Cited at Congressional Hearing’, Sept. 30, 2008, <http://www.microwavenews.com/kucinich.html>, Accessed June 11, 2009.

demonstrate that children are more vulnerable than adults to carcinogens." Carpenter stated at the hearing that "the evidence is certainly strong enough for warnings that children should not use cell phones." He warned that, "The failure to take [strong preventive action] will lead to an epidemic of brain cancer."¹¹

Concerns have also reached the governmental level in France with the Health Minister Rosalyne Bachelot announcing on May 26, 2009 a new initiative which includes banning cell phones in primary schools, banning cell phone use by children under the age of six and the manufacture and marketing of phones that can only be used for texting or be used with an earpiece attached¹². This is to prevent the use of the phone close to the head.

In March 2, 2009 the Russian National Committee on Non-Ionising Radiation Protection (RNCNIRP) issued official advice that the "health of the present generation of children and future generations is under danger" from cell phone use and therefore the committee has recommended that cell phone use be restricted for people under 18 years of age. The RNCNIRP supports the dissemination of information specifically for parents, teenagers and children on the dangers of cell phone use and has called for the banning of cell phone advertising targeting children.¹³

In addition to the above concerns, Professor Bruce Armstrong, the head of the Australian section of the international 13 nation Interphone Project, studying the possible long-term hazards from cell phone use, saw that for long-term users a suggestion of an increased risk of gliomas on the same side of the head that a cell phone was usually used and as a result recommended that cell phone exposures should be limited, especially for children.¹⁴

Earlier Australian calls for concern over the unrestricted use of cell phones by children were expressed by the Commonwealth Science and Industrial Research Organisation (CSIRO) in 2000 and the Australasian College of Nutritional and Environmental Medicine (ACNEM) in 2003. Dr. Gerry Haddad, head of the CSIRO's Telecommunications and Industrial Physics Department, stated in Senate hearings that there was a need to "restrict use of mobile phones for children for essential purposes...a precautionary principle would seem to be a good idea"¹⁵.

In 2003 the Australasian College of Nutritional and Environmental Medicine (ACNEM) published a paper by this author that detailed reasons why extra precautions needed to be taken for children and cell phone use. The paper included a number of statements of concern specific to this issue from scientific and medical organizations internationally. These included the U.K.'s Independent Expert group on Mobile Phones (IEGMP), the

¹¹ *ibid.*

¹² L. Mclean, 'France cracks down on EMR exposures', *EMR and Health*, vol. 5, no. 2, 2009.

¹³ Y. Grigoryev, 'Memorandum, The opinion of the Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP)', Mar. 4, 2009, <http://www.icems.eu/docs/Russian%20statement.RNIRP.MAR09.pdf>, Accessed June 2, 2009.

¹⁴ ABC Lateline transcript, 'Scientists speak out on mobile phone, cancer link', April 4, 2009, <http://www.abc.net.au/lateline/content/2008/s2533725.htm>, Accessed June 7, 2009.

¹⁵ G. Haddad (testimony), The Australian Senate Environment, Communications, Information Technology and the Arts References Committee: Inquiry into Electromagnetic Radiation, June 2000.

International Institute of Biophysics, Germany, the German Interdisciplinary Association for Environmental Medicine and the World Health Organisation's Director General Dr. Gro Harlem Brundtland to name a few. The ACNEM paper concluded with the question: "Is it worth the risk" to continue to allow unrestricted cell phone use by children?¹⁶

In stark contrast to the above concerns, however, Australian Centre for Radiofrequency Bio-effects Research (ACRBR) is apparently of the opinion that it is worth the risk. On the ABC *Lateline* program (April 4, 2009) Dr. Rodney Croft, Director of ACRBR, stated: "There really has been a lot of research done to date and the research has very clearly shown that there aren't any effects. With children, I really don't think there is any evidence suggesting that this might be a problem. There isn't anything to suggest that we may have to be a little bit more cautious."¹⁷ To visually back up ACRBR's dismissive viewpoint on children and cell

phone use on the ACRBR web site is an animated GIF image that includes images of children happily using cell phones.¹⁸

Readers at this point would be forgiven if they found somewhat confusing the huge disparity between ACRBR's stance on children's use of the phones and those of Khurana, Teo, Bittar, Armstrong and the rest. In order to seek to clarify why such a disparity exists this paper looks at the development of the Australian research effort into the possible hazards of cell phone use and the commercial and political influences that have been brought to bear on the scope, interpretation and use of that research. The starting point for this enquiry is to examine the important role previously played by the Commonwealth Scientific and Industrial Research Organization (CSIRO) which was the prime mover in creating the first Australian telecommunications frequencies¹⁹ standard setting committee under the auspices of the Standards Association of Australia (SAA) in 1979. During this time, and later under Standards Australia, CSIRO's Division of Radiophysics took the position that technology should be applied with public safety as a prime consideration.

The CSIRO and radiation politics

The history of the CSIRO, Australia's premier scientific research organization, begins in 1916 when the federal government established an Advisory Council of Science and Industry (ACSI). The goal for ACSI was to gather information on Australian scientific work, undertake research, review existing research and collect and disseminate scientific information to the public. In 1920 the Commonwealth Institute of Science and Industry (CISI) was established, under the directorship of physicist and statistician Sir George Knibbs.

¹⁶ D. Maisch, 'Children and Mobile Phone Use...Is There a Health Risk?' *JACNEM*, vol. 22, no. 2, August 2003, pp. 3-8, http://www.emfacts.com/papers/children_mobiles.pdf.

¹⁷ ABC *Lateline* transcript, op. cit.

¹⁸ ACRBR main page, <http://www.acrbr.org.au/>, Accessed June 7, 2009.

¹⁹ Denoted as radiofrequency and microwave frequencies (RF/MW) sometimes simply as RF.

In 1926 the British government's Balfour Declaration established the British Commonwealth of Nations and the Empire Marketing Board was created to foster closer economic, scientific and technical cooperation between Commonwealth countries. As a result, the Australian Prime Minister Stanley Melbourne Bruce arranged for Sir Frank Heath of the British Department of Scientific and Industrial Research to report on reorganising CISI. His report resulted in legislation being passed in 1926 that established a successor agency, the Council for Scientific and Industrial Research (CSIR), charged with carrying out scientific research for the benefit of primary and secondary Australian industries. Scientific advice to the government on the setting up of CSIR argued strongly that creative scientific research required a type of working environment not usually found in government departments. As a result, CSIR was set up as a statutory authority with a governing council to oversee appointments and staff management run by an Executive Committee of three. In 1936 the government extended the role of CSIR to provide scientific assistance to secondary industry. With the creation of the National Standards Laboratory, the Aeronautical Laboratory and the Division of Industrial Chemistry in the years 1937-40, CSIR played an important part in the rapid wartime development of Australian industry. As part of the wartime effort CSIR established the Radiophysics Advisory Board and the Division of Radiophysics in 1939. After the war, research expanded to include areas such as building materials, wool textiles, coal, atmospheric physics, physical metallurgy and assessment of land resources.²⁰

Because of conflicts between the need to maintain its scientific freedom during the early years of the 'Cold War' with the Soviet Union, CSIR ceased all secret or 'classified' work of a military nature under the Science and Industry Research Act of 1949 and was reconstituted as CSIRO, the Commonwealth Scientific and Industrial Research Organization. Over the next 30 years CSIRO research covered almost every area of primary, secondary and tertiary industry. In addition it expanded into areas affecting the community, such as environment, human nutrition, conservation, urban and rural planning and water supplies. In 1978 the approximately 30 existing research divisions were grouped into areas of compatibility called Institutes, with Directors appointed to oversee an integration of planning, research and resources within their area, such as agriculture, industrial technologies or minerals. In 1986 a Board of external members plus a Chief Executive to lead CSIRO was formed. Among other changes was a decentralisation where much of the central administrative work was devolved to the Institutes.²¹

The current corporate structure of CSIRO is a result of the Board Review's recommendations of the Board Review, from 1996. The Chief Executive is supported by four Deputy Chief Executives who oversee part of the research activities and one or more corporate functions. The Institute structure was abolished with fewer but larger divisions established. These divisions operate as semi-autonomous business units reporting to the Deputy Chief Executives. Sector Advisory Committees have been established to provide advice on strategic research directions and to improve "the interface with industry and society".²²

²⁰ CSIRO History, <http://www.csiro.au/index.asp?type=blank&id=CSIROhistory> Accessed November 8, 2005

²¹ *ibid*

²² *ibid*

As mentioned previously, the CSIRO was the driving force in creating Australia's first national telecommunications radiofrequency and microwave (RF/MW) standard setting committee in 1979, as well as assisting in drafting the first Australian RF/MW exposure standard (AS 2772-1985). CSIRO took an active interest in non-ionising radiation health effects, from cell phones to ultrasound, and played a leading role for many years on the radiofrequency standards committee, having high regard for public health and safety.

In early 1994 Spectrum Management Agency (SMA)²³ commissioned the CSIRO's Division of Radiophysics to undertake a comprehensive review of the available world wide research on the biological effects of RF/MW exposure on the human body. Funding for the study came from the national carrier Telecom (later Telstra), and the carriers Optus and Vodafone and the review report was authored by Dr. Stan Barnett from CSIRO's Ultrasonics Laboratory, Division of Radiophysics.

This report listed many well-documented adverse bio-effects from exposure to RF/MW at power levels well below the threshold for thermal effects²⁴, which the Australian and International exposure standards were based on. It also listed many laboratory studies that reported bio-effects at power levels well below the maximum standard limit of 1mW/cm², with implications for possible adverse effects on the human immune system. The

importance of non-thermal interaction²⁵ with the human body was a central feature of the CSIRO report.²⁶ For example, in the Section 9.0, "Mechanisms of Interaction" it is stated (in part):

The reported effects are unexpected from the existing knowledge on physical interactions since they do not appear to be described by classical intensity- or dose-response relationships. It seems to be unlikely that a single biophysical interaction mechanism will be adequate to explain all of the reported non-thermal effects of RF and microwave radiation.²⁷

In his report, Barnett pointed out that the research data-base to date was inconclusive, and called for the establishment of an effective research program to determine threshold levels for the onset of RF/MW bioeffects. This research was to span from the level of molecular biology to whole-body physiological reactions and included consideration of possible non-thermal low-level bio-effects. CSIRO considered that the creation of an independently verified data-base was necessary to be able to develop meaningful safety standards and

²³ Spectrum Management Agency (SMA) was a Commonwealth statutory agency within the portfolio of Communications and Arts. The primary function of SMA was to manage and allow access to the radiofrequency spectrum. On July 1, 1997 SMA was merged with the telecommunications regulator, AUSTEL, to form the Australian Communications Authority (ACA).

²⁴ This is defined as an obvious detrimental biological effect (tissue heating) from exposure to acute (high-level) RF/MW exposure levels.

²⁵ Defined as possible biological effects from RF/MW exposures at levels (intensities) to low to cause a heating effect.

²⁶ S. Barnett, *Status of Research on Biological Effects and Safety of Electromagnetic Radiation: Telecommunications Frequencies*, CSIRO Report, CSIRO Division of Radiophysics, June 1994

²⁷ *ibid*

achieve the trust of the public. The report went on to recommend specific areas of research that it felt was needed and called for the formation of an expert committee to oversee such a program.²⁸

The CSIRO report, however, was very controversial as it contradicted the opinion of the telecommunications industry that there were no known non-thermal effects from RF/MW. The report also brought into question the credibility of government policy to promote telecommunications and as a result, the report was classified "Confidential" and withheld from publication. This was the case until its existence was leaked to the magazine *Communications Day* and the office of Australian Democrats Senator Robert Bell in March 1995.²⁹

The CSIRO report, after its distribution by the Australian Democrats, became an alternative source of expert knowledge for the public who were concerned about possible unintended hazards from the rapid proliferation of wireless technology. This development would have been of concern to the federal government as it was a majority shareholder in Telstra and therefore had a vested interest in protecting its investment and promoting telecommunications technology and its safety. Sociologist Sheila Jasanoff has written of similar situations where "the credibility of governmental actions in contemporary knowledge societies depends crucially on the public evaluation of competing knowledge claims and the consequent production of reliable public knowledge."³⁰ Considering Jasanoff's words, the CSIRO report could be seen as a threat to the government's credibility in relation to government statements on the safety of telecommunications technology.

After pointing out research priorities in the report, CSIRO's Department of Radiophysics³¹ applied several times to the National Health & Medical Research Council (NH&MRC) for funding to research the potential effects of mobile phone radiation on DNA and cancer. However, despite the fact that the Division of Radiophysics was arguably well qualified to conduct the research, it was in both instances rejected. This rejection was possibly due, not only because the government considered CSIRO to be in conflict with government policy, but because various people from government, Telcom (Telstra), Optus and Vodafone had claimed that the CSIRO report was merely a blatant attempt to gain research funding.³² If CSIRO had been successful in gaining funding for research it would have been conducted by their own researchers who did not necessarily share government and industry views on the safety of telecommunications technology. The history of CSIRO's telecommunications policy on standard setting illustrates that they consistently weighed up conflicting

²⁸ *ibid*

²⁹ D. Maisch, *Fields of Conflict: The EMF Health Hazard Controversy*, Australian Democrats, Aug. 1995, Anonymous letter from a Telecom employee to Senator Robert Bell, Mar. 30, 1995, pp. 56-58.

³⁰ S. Jasanoff, in "Organizational Encounters with Risk", ED. Hutter and Power, Cambridge University Press, 2005. "Restoring reason: causal narratives and political culture" pp. 209-232.

³¹ In 1996 the Division of Radiophysics was merged with the Division of Applied Science to become the Division of Telecommunications and Industrial Physics (TIP).

³² Maisch 1995.

viewpoints on safety. The knowledge thus generated by a CSIRO research program would have been considered as an unknown quantity (a 'loose cannon' so to speak) with the potential to conflict with both government and industry policy and generating what Jasanoff called "competing knowledge claims".

CSIRO was subsequently removed from any involvement with the mobile phone research program later established by NH&MRC, and was also removed from any future involvement with non-ionising research altogether in 2003.³³ It was at a time when the federal government was instigating changes to the CSIRO management, appointing an executive with experience in venture capital expertise to build partnerships with industry and re-model CSIRO as a profit-centred corporate business. In January 2001 the federal government appointed Dr. Geoff Garrett as CEO of CSIRO and he was re-appointed in April of 2005. One of Garrett's pledges to the government when he first took up his post was to increase external funding to CSIRO by encouraging industry partnerships and commercialising patents for CSIRO discoveries. One initiative was to replace key CSIRO executives with people with "venture capitalist expertise".³⁴ In an October 2005 interview on *CEO Insight*, Australia's leading web site for corporate CEOs, Dr. Garrett talked about "traditions that need to be preserved and those that were simply historical responses to conditions that may no longer apply". A major part of Garrett's changes was in the area of communication which he considered to be 60% of the overall necessary changes to the organisation. Garrett saw as essential that with communication, key stakeholders – by which he meant industry- needed to hear the same messages.³⁵

In order to 'improve' CSIRO communication, in May 2002 Garrett removed Julian Cribb as Director of National Awareness (public communication) at CSIRO. Cribb, the principal of Julian Cribb & Associates, specialists in science communication, was eminently qualified for his former communications appointment at CSIRO. He was Adjunct Professor of Science Communication at the University of Technology Sydney and had authored a book *Sharing Knowledge*, a manual for effective science communication.³⁶

In early 2004, Dr. Garrett with the approval of Science Minister Peter McGauran took an unusual step by announcing the creation of a new CSIRO senior staff position of "Director of Communications" as one of his initiatives to make CSIRO into more of a money making "corporate business" instead of an agency doing research predominantly in the public interest.³⁷ A number of CSIRO staff objected, since the position had been created and imposed on the organisation from above, and not by any normal procedures involving the scientific committees of the organisation.³⁸ In spite of these objections, Donna Staunton was selected and took up the new staff position at CSIRO, on March 1st, 2004, on a three year

³³ S. Barnett, circulated letter, September 22, 2003.

³⁴ ABC Online, *Inside Business* – CSIRO heads toward commercialisation, November 11, 2003.

³⁵ CEO Insight, *Making change happen: Geoff Garnett at CSIRO*, October 30, 2005.

³⁶ <http://www.csiro.au/index.asp?type=resume&id=CribbJulian&stylesheet=aboutCSIROResume> Accessed October 31, 2005.

³⁷ The Science Show, Science Funding & CSIRO, Saturday 24 April 2004, <http://www.abc.net.au/rn/science/ss/stories/s1090774.htm> Accessed October 30, 2005.

³⁸ Correspondence with Stewart Fist, October 14, 2005.

contract staff position with salary of around \$330,000 a year, placing Staunton in the top four earners in CSIRO at roughly three times the salary of a senior research scientist.³⁹ When CSIRO management made a brief announcement to their staff of her hiring it did not mention her background qualifications but said she “is highly regarded in political and corporate spheres.”⁴⁰ According to Dr. Peter Pockey, writing in *Australasian Science*, it was widely considered that Staunton was selected on Garrett’s personal recommendation.⁴¹ The job specification did not require the appointee to have any experience in science or its communication. Staunton stated that her expertise is in “risk management and reputation management”.⁴² According to her consultancy’s website at the time Staunton “brings a very deep knowledge of the corporate sector to this business. She understands the way the corporate sector needs to successfully interact with its many stakeholders – the media, government, shareholders, the investment community, staff, customers and the general public.”⁴³ As CSIRO Director of Communications one of Staunton’s tasks was liaising between the media and agency scientists, essentially working as a censor through which agency scientific findings would be put before releasing to the media and public.⁴⁴

Donna Staunton’s previous experience illustrated that conflict of interest was a non-issue in the new corporate CSIRO. She had previously been a lawyer with the legal firm Clayton Utz where her job was to handle work for tobacco cases on behalf of the industry. She later became Chief Executive Officer of the Tobacco Institute of Australia and Vice President for Corporate Affairs of the Philip Morris Group.⁴⁵ Dr. Peter Pockey, science journalist for *Australasian Science*, raised concerns over Staunton’s tobacco past in *The Canberra Times* in April 2004. Pockey said that: “Its unlikely that trust in science can improve in Australia when public comment [by] the premier scientific research organisation if filtered by a manager who has used science to put corporate interests ahead of community health.”⁴⁶ The Editor of *Australasian Science*, Guy Nolch, put it more strongly on May 28, 2004 when he said that, “Staunton’s appointment is an endorsement by CSIRO of the tobacco industry, and signals CSIRO’s desire to employ the methods Staunton used to put the interests of the tobacco industry ahead of the interests of public health.”⁴⁷ Stanton also held a position on the board of the Institute of Public Affairs (IPA), an organisation that proclaimed that it was “Australia’s Leading Free Market Think Tank”. As for its position on climate change, IPA

considered global warming a natural cyclic event and all climate scientists who thought otherwise were suffering from the disease of “Mother Earthism” with a “touching belief in the Garden of Eden, the halcyon state of the Earth in times before the wicked Industrial

³⁹ The Science Show, op. cit.

⁴⁰ *ibid.*

⁴¹ P. Pockey, ‘Tobacco “Statement Disingenuous”, *Australasian Science*, July 2004, p. 44.

⁴² The Science Show, op. cit.

⁴³ <http://www.dstaunton.com/experience.htm>, Assessed October 29, 2005.

⁴⁴ CSIRO Executive Team, Resume of Ms Donna Staunton: Executive Director of Communications, http://www.csiro.au/csiro/content/standard/psh4_1.html, Accessed February 16, 2006.

⁴⁵ The Science Show, op. cit.

⁴⁶ S. Grose, ‘New medium is unwilling to be the message’, *The Canberra Times*, Apr. 21, 2004.

⁴⁷ *Australasian Science*, op. cit.

revolution.”⁴⁸ Such strong statements were in sharp contrast to the CSIRO’s climate change division where they have stated: “Over the past 200 years, human activities have significantly altered the world’s atmosphere.”⁴⁹ As a reflection of how the CSIRO had changed under the guidance of Garrett and Staunton, in 2005 the Media, Entertainment and Arts Alliance (MEAA) gave CSIRO management a special commendation in its George Orwell Awards for those who have done the most to suppress press freedom.

According to investigative journalist Stewart Fist a close link is seen between the Liberal Party, the tobacco industry and Staunton in that the current Deputy Leader of the Liberal Party, the Hon. Julie Bishop, was also a lawyer at Clayton Utz from 1983 to 1998. While working at the firm, Bishop as managing partner, worked on behalf of the Tobacco Institute fighting a high profile passive smoking case (Burswood Casino) and opposing an active anti-smoking lobby in Western Australia. In their intersecting roles Bishop and Staunton would have been close working associates. After resigning from Clayton Utz Bishop became a Liberal candidate for the federal seat of Curtin and won the seat in the election held in October 1998.⁵⁰

The NH&MRC and radiation politics

Even though the Liberal government had eliminated CSIRO from the non-ionising radiation issue altogether by 2003, the 1994 CSIRO recommendations for a research program were later largely adopted by the NH&MRC, the national peak body offering grants for health and medical research. The CSIRO report had called for an expert committee to be established to oversee an Australian research effort that would critically evaluate the dosimetry and bio-effects of published studies, and create direct lines of communication between research, regulatory and political sectors. It would also design research protocols for critical areas of research and collaborate with international organizations to verify research.⁵¹

In 1996 NH&MRC did establish an expert committee along the lines of the CSIRO recommendations. Concerned about the potential involvement of the telecommunications industry in this process, Sarah Benson, a researcher for Senator Lyn Allison, wrote to the NH&MRC in early December 1996 asking about industry representation. On December 30 Richard Morris, Assistant Secretary of the Health Research Branch, replied, stating that members of the telecommunications industry would not be involved:

In regard to your concern about the involvement of industry in the NH&MRC process, let me assure you that members of the NH&MRC Expert Committee will be active

⁴⁸ B. Carter, ‘All the signs of full-blown Mother Earthism, *Sydney Morning Herald*, Sept. 29, 2005, <http://www.smh.com.au/news/opinion/all-the-signs-of-fullblown-mother-earthism/2005/09/28/1127804546992.html> Accessed October 30, 2005. Also see: <http://www.ipa.org.au/units/climatechange.html> Accessed Oct. 30, 2005.

⁴⁹ CSIRO, <http://www.marine.csiro.au/iawg/impacts2001.pdf> Accessed Oct. 31, 2005.

⁵⁰ Correspondence with Stewart Fist, September 1, 2009.

⁵¹ Barnett, CSIRO Report, 1994, op. cit.

researchers without links to the telecommunications industry. This independence from industry is seen as being of great importance to NH&MRC.⁵²

Despite this assurance from the NH&MRC, when it came to appointing a key expert radiation adviser to its EME Expert committee, they chose Dr. Ken Joyner, Motorola's Director of "Global EME Strategy and Regulatory Affairs"⁵³. Dr. Joyner has also represented the Australian Mobile Telecommunications Association, an industry group, on the telecommunications standards committee⁵⁴ and had also represented the Mobile Manufacturers Forum.⁵⁵

Such a complete reversal of their former stance that "independence from industry is seen as being of great importance" was most likely a result of direct political interference by the federal government. Joyner has been closely associated with the formulation of government policy on RF exposure. This is seen in the *Bioelectromagnetics Newsletter* of July/August 1998. In his article titled "Australian Government Action on Electromagnetic Energy Public Health Issues" Joyner's affiliation was given as representing the Australian Federal Department of Communications and the Arts⁵⁶.

When asked by Senator Lyn Allison about the advisability of Dr. Joyner being appointed to the NH&MRC Expert Committee to advise on submitted proposals for mobile phone research, Minister Senator Richard Allston saw no conflict of interest because (in part):

Dr. Joyner's involvement in the EME Expert Committee in relation to communications technology is as an individual and not as a representative of the telecommunications industry or his employer, Motorola.⁵⁷

Despite Allston's assurance of Dr. Joyner's advice being independent from Motorola's corporate objectives, it must be noted that Motorola has been active in attempting to influence mobile phone research internationally. For example, Motorola has played a central role in the European Union's cell phone research effort. This was not without complaints. As reported in *Microwave News* (1999) there was a fair amount of discontent on part of European scientists with Motorola's involvement with the EC research and telling European scientists how to spend research funds.⁵⁸

⁵² Letter from Richard Morris, Assistant Secretary, Health Research Branch, NH&MRC, to Sarah Benson, researcher for Senator Lyn Allison, 30 Dec. 1996.

⁵³ The Australian Academy of Science, <http://www.ncrs.org.au/annual/2005.pdf> Accessed March 6, 2007

⁵⁴ Standards Australia, Committee TE/7: Human Exposure to Electromagnetic Fields, meeting No. 1/98, 12 August 1998. Minutes.

⁵⁵ Australian Senate Inquiry, 2002, http://www.apf.gov.au/senate/committee/ecita_ctee/completed_inquiries/1999-02/emr/report/c04.htm Section 4.68, Accessed, Oct 2, 2005.

⁵⁶ K. Joyner, Australian Government Action on Electromagnetic Energy Public Health Issues. *Bioelectromagnetics Society Newsletter*, No. 143, July/Aug. 1998.

⁵⁷ Mobile Phone Emissions: Research Grants, *Australian Senate Hansard*, page 2603, May 12, 1998

⁵⁸ L. Slesin, 'The Talk of Long Beach: Motorola Takes Center Stage as Carlo Makes His Exit', *Microwave News*, vol. 19, no. 4, July/Aug. 1999.

The NH&MRC has long established conflict of interest guidelines for a wide range of possible situations with a requirement for “Disclosure of interests” which applied to membership of the EME Committee. To quote:

In the case of direct pecuniary interest, members may not take part in any decision to which the potential conflict of interest pecuniary interest applies, and must physically absent themselves from all or any part of a formal meeting or other discussion at which the matter in question is being discussed.⁵⁹

If this requirement was vigorously applied then it is difficult to see how Dr. Joyner could have been involved at all when the matter in question was mobile phone research. However this requirement could conveniently be waived because of an opt-out clause that states: “the Chair of the Expert Committee, in consultation with the other uninvolved members of the Expert Committee, will determine the extent to which a member may be involved in the discussion or decision concerning the matter involving the potential conflict of interest”.⁶⁰

In January 2009 Dr. Joyner announced that he was leaving his Director position at Motorola after 12 years and was “looking for new opportunities to work in the telecommunications industry”.⁶¹ Dr. Joyner is listed on the current NH&MRC website (Sept 2010) as one of over 700 peer reviewers for the year 2009 and his affiliation is given simply as “consultant”.⁶²

The ACRBR and radiation politics

In 2003 the NH&MRC awarded \$2.5 million in funding to establish a so-called “Centre of Excellence”, the Australian Centre for Radiofrequency Bio-effects Research (ACRBR), based at RMIT University in Melbourne, Victoria. ACRBR was to investigate and advise on possible biological effects arising from exposure to radiofrequency radiation (RFR) from telecommunications technology. The person selected by the NH&MRC’s EME Committee to take up a position as the first Director of ACRBR was Associate Professor Vitas Anderson⁶³, a close associate of Dr Joyner, and a former Telstra employee who represented Telstra’s interests on the former Standards Australia TE/7 standards committee. On that committee Anderson opposed CSIRO’s scientific position regarding the existence of nonthermal bio-effects from telecommunications RFR, which he saw as purely hypothetical. He saw the real task as being the need to “comfort the community” about the safety of wireless communications.⁶⁴

⁵⁹ Senate Hansard, 12 March 1998, p 1012

⁶⁰ *ibid*

⁶¹ C. Althaus. AMTA CEO, Dr Ken Joyner to leave AMTA Committee roles, *AMTA Snapshot*, Edition 141, Jan. 16, 2009.

⁶² NH&MRC, Peer Reviewers and External Assessors (2009), <http://www.nhmrc.gov.au/grants/peer/reviewers2009.htm>, Accessed Sept 10, 2010.

⁶³ RMIT research & innovation,

<http://www.rmit.edu.au/browse/Our%20Organisation%2FResearch%2FResearch%20Centres/#nhmrc> Accessed June 3, 2007. The current Executive Director of ACRBR is Professor Rodney Croft.

⁶⁴ D. Maisch, Notes from the Final Standards Australia TE/7 meeting, March 1999

In 2001 Anderson appeared on the Australian SBS TV *Insight* program *The Mobile Phone Debate*. Anderson appeared at the behest of the transnational public relations agency Burson Marsteller⁶⁵, one of the world's biggest PR firms, well known for its work on behalf of the tobacco industry⁶⁶, and the industry group the Australian Mobile Telecommunications Association (AMTA) of which Burson Marsteller is listed as one of AMTA's "Support Industries"⁶⁷. Anderson was introduced as a "Mobile Phone Industry Consultant."⁶⁸

As taken from the transcript of that program, Anderson's views on the mobile phone health issue were as follows:

The issue of mobile health effects is something that's been looked at for a long time and it's something that's been under review almost continuously, at least for the last 20 years quite intensively, and the evidence that we have to date, clearly indicates that there is no real reason for concern from the evidence that we have so far.⁶⁹

The presenter, Gael Jennings, later asked Anderson: "Are you saying that as a scientist, you don't accept that there may be a mechanism whereby cells can be harmed in the laboratory, you don't accept that research? Are you saying that?" To this Anderson replied:

Well, actually it's not just a matter of myself not accepting it. Actually, it's merely the consensus of the general scientific community. There has been review, after review, after review on this topic. You'll find that some agencies may recommend one [a precautionary approach] in terms of dealing with the social issues of mobile phones but in terms of a health effect, there really is no substantive reason to recommend a precautionary approach.⁷⁰

Anderson further elaborated his doubts about a precautionary policy for mobile phones in a paper titled, "Mobile Telephony and the Precautionary Principle - A Phoney Debate?" published in *Radiation Protection in Australasia* in 2001. Anderson considered that the precautionary approach itself generated risks. Anderson wrote that:

In its worst form the PP [precautionary principle] can create arbitrary and onerous regulatory measures without regard to new community risks and costs that may be generated, e.g.: denying or delaying public access to the social, economic and public safety benefits of mobile telephony; redirection of limited community resources away from more important public safety issues; protracted legal argument (and costs) over the vague definitions inherent in the PP; undermining of the integrity of the scientific method in determining the true level of any health risk from direct exposure to low level

⁶⁵ *Insight* archives, 'Mobile Phone Debate', July 5, 2001, <http://news.sbs.com.au/insight/trans.php?transid=225>, Assessed June 3, 2007.

⁶⁶ Burson Marsteller, Tobacco Documents, <http://tobaccodocuments.org/profiles/bm.html> Accessed June 3, 2007

⁶⁷ AMTA's 2003 Annual Report, pp 28

⁶⁸ *Insight* archives, op. cit.

⁶⁹ *ibid.*

⁷⁰ *ibid.*

EME; Inappropriate occupational and public risk behaviours based on an exaggerated concern of EME as implied by the PP.⁷¹

Anderson then introduced the concept of a precautionary approach to the precautionary approach, when he concluded that:

There is little published data to quantify these risks, though a strong prima facie case exists for a cautious approach to the PP. A considered decision on the PP that protects the public interest will require quantitative analysis of the risks generated by the PP described above.⁷²

Considering the above it was surprising that the issue of a conflict of interest was not apparently raised at the time about Anderson's appointment as the first Director at ACRBR.

With research into the effects on public health from non-ionizing radiation exposures being taken from the CSIRO by the government, RMIT University became a base for ACRBR. RMIT University is "renowned for collaborating with industry, providing solutions, new ideas and processes that deliver real outcomes for business".⁷³ A cooperative relationship with Telstra was ensured by the already close working relationship between the two organizations. RMIT University was also home to the "Telstra Home Team: a different way of thinking", a team consisting of 5 postgraduate researchers funded by Telstra. The Team "undertakes research projects for Telstra while studying full time at RMIT".⁷⁴

RMIT University was also a partner in the Australian Telecommunications Cooperative Research Centre (ATCRC), whose focus was on "developing and commercializing the technologies that will drive a new generation of telecommunications."⁷⁵ RMIT University, therefore, was charged with conflicting duties of both commercialising communications technology and researching for possible health effects from that technology. This should have raised the question of a possible conflict of interest within the university.

In order to answer the conflict of interest question it is necessary to consider RMIT University's Conflict of Interest policy, "Business risks to the University", where it is stated that a conflict of interest may exist when:

- The potential for employees to act in a way which is not, or is perceived not to be, in the best interests of the University.
- The potential for financial loss by the University because of the employee's actions.

⁷¹ V. Anderson, 'Mobile Telephony and the Precautionary Principle - A Phoney Debate?', *Radiation Protection in Australasia*, vol. 18, no. 2, Dec. 2001, pp. 71-76.

⁷² *ibid.*

⁷³ RMIT University, Industry and Business // Get your strategic advantage, <http://www.rmit.edu.au/advantage/>, Accessed January 10, 2008

⁷⁴ RMIT University, Telstra Home Team, A different way of thinking, <http://www2.rmit.edu.au/departments/rd/case/case8.htm>, Accessed January 10, 2008.

⁷⁵ RMIT Research Specialties, <http://www.rmit.edu/sece/research> Accessed October 31, 2005.

- The potential for the boundaries between the University and its interests, and the external company and its interests to be blurred.
- The potential for the University to be joined in legal proceedings because of the employee's position on the board.⁷⁶

Although these points seem straightforward for addressing individual (employee) conflicts of interest this chapter will examine how these can be interpreted in various ways, especially when it comes to the larger issue of institutional conflicts of interest.

With such a close working relationship between RMIT University and Telstra, there is little risk of a conflict of interest arising between the two as both have a shared interest in developing and commercializing the technology. Such shared goals between university and business interests were first termed the "university-industrial complex" by Martin Kenney in the title of his 1986 book "Biotechnology: The University-Industrial Complex". Kenney, an assistant professor of agricultural economics at Ohio State University, raised concerns over the development of close business ties between many universities and large biotechnology corporations, and how this "university-industrial complex" would affect educational institutions, agriculture, and society in general.⁷⁷

Sheldon Krimsky in "*Science in the Private Interest*" (2003) examined the ethical quandary whereby university research has generally become deeply entangled with entrepreneurship and commercial interests - to become what Krimsky called an "inevitable tide of corporate and academic partnerships and the commercialism of knowledge". Krimsky concluded: "As universities turn their scientific laboratories into commercial enterprise zones, and select faculties to realize these goals, fewer opportunities will exist in academia for public interest science -an inestimable loss to society."⁷⁸

In relation to the first three points in RMIT University's conflict of interest business policy (above), a conflict of interest could arise, for example, if ACRBR researchers at the university found evidence that telecommunications technology had adverse health effects. This was a concern mentioned by Telstra in bold type in its 2004 Telstra Annual Report where it was stated, under the heading "Risk factors" that "**[t]he establishment of a link between adverse health effects and electromagnetic energy (EME) could expose us to liability or negatively affect our operations**".⁷⁹ Consequently, any research effort into this possible link would be of vital importance to Telstra, not because of the truth it may uncover but its potential to adversely impact on litigation, regulation and the corporation's bottom line. It is interesting to note that in the same year Telstra was informing its investors that a risk existed, it was also telling the Australian public that there was no health risk

⁷⁶ RMIT conflict of interest policy: <http://131.170.40.30/redirect?URL=http%3A%2F%2Fprodmails.rmit.edu.au%2Ffgznvzyjv4qi.doc>, Assessed January 10, 2008

⁷⁷ M. Kenney, *Biotechnology: The University-Industrial Complex*, New Haven: Yale University Press, 1986.

⁷⁸ S. Krimsky, *Science in the Private Interest: Has the lure of profits corrupted biomedical research?*, Rowman & Littlefield Publishers, Inc. 2003.

⁷⁹ Telstra Annual Report (2004), <http://www.telstra.com.au/abouttelstra/investor/docs/companyoverview.pdf>, Accessed October 12, 2005

from their use of mobile communications.⁸⁰ As for the focus of Telstra's corporate research interests, according to Krinsky (2003) "corporations view science not as a generator of truth but as one among many inputs into production".⁸¹ Thus, depending upon what ACRBR research finds, the following could apply in relation to RMIT University's Conflict of Interest policy:

If a link between telecommunications technology and adverse health effects were found by ACRBR researchers at the university, this would pose a risk to both Telstra's and the university's operations - and also the university's shared ventures with Telstra. Thus, if this were to be the case, it could conceivably be said that the researchers who had found the risk had inadvertently acted "in a way which is not, or is perceived not to be, in the best interests of the University" and the interests of its partner Telstra. This situation would create a "potential for financial loss by the University because of the employee's actions". Such a situation would be likely to create conflict between Telstra's corporate interests and the university's interest in maintaining an unblemished image as an esteemed research organisation.

In relation to RMIT University's conflict of interest policy on the "potential for the University to be joined in legal proceedings...", it is worth noting the case of Dr. James Kahn and his employer, the University of California at San Francisco. Kahn had conducted a study on the effectiveness of an AIDS vaccine. When he found that the vaccine was ineffective, the drug company that provided the funding refused to supply more data and took action to block publishing of the study. Much to the credit of the university, rather than admonishing Dr. Kahn for creating a conflict with their corporate sponsor, they supported Dr. Kahn with the publishing of the study in the *Journal of the American Medical Association* in 2001. The company then proceeded to file a \$7-10 million legal case against both Dr. Kahn and the university.⁸² Besides a conflict of interest, this case clearly demonstrates the pitfalls that can occur in university-industry partnerships when research uncovers scientific findings not to the liking of the industry partner.⁸³

However, while ACRBR became the centre stage for Australia's research on the health impacts of telecommunications equipment, the situation was quite the opposite at CSIRO. In September 2003 Dr. Stan Barnett, author of the CSIRO report, circulated a letter to announce that he had been forced to accept "involuntary redundancy" from CSIRO and that his division had been told by senior management to cease all further research into the bio-effects and safety of ultrasound and non-ionising radiation. This was despite the fact that CSIRO ultrasound research had found that pulsed Doppler ultrasound, widely used in Australia on pregnant women, could cause significant heating of up to five degrees in the foetus, particularly near the bones. Barnett's research also indicated that foetal tissue was

⁸⁰ Telstra/Australian Government joint DVD, 'Mobile Communications and Health', 2004.

⁸¹ Krinsky, 2003, op. cit., Also see: <http://www.tufts.edu/~skrimsky/PowerPoint/COIAcademicSci4.pdf>, Accessed Jan 4, 2008.

⁸² T. Bodenheimer, R. Collins, 'Integrity in Science, Telling the Truth: What Drug Companies Don't Want You to Know'. http://www.cspinet.org/integrity/tell_truth.html, Accessed January 12, 2008.

⁸³ Many similar cases of the pitfalls that can occur in university-industry partnerships are detailed in: Resnik DB & Shamoo AE, Conflict of Interest and the University, *Accountability in Research: Policies and Quality Assurance*, vol. 9, no. 1, Jan. 2002, pp. 45-64.

vulnerable to physical change from the heating, including cell differentiation, which could have significant consequences for the developing foetus. Barnett had stated that the clinical implications of possible non-thermal effects from the use of ultrasound had not been fully evaluated, and that the ultrasound scientific database was incomplete and could not keep pace with technological development of modern equipment.⁸⁴ Barnett's preliminary ultrasound work raised serious questions about a widely used technology that was being increasingly promoted as a safe procedure for the unborn child. For that reason a priority was evident to continue the research in the public interest. However, if further research confirmed Barnett's findings, there was the potential for a substantial risk for both the ultrasound industry and medical practices using the equipment.

Barnett stated in his 2003 letter that:

CSIRO has chosen to stop all research into bio-effects and safety of diagnostic ultrasound and cease any involvement in safety of non-ionising radiation in general. It seems that research for the good of the community is not considered a priority area unless it is politically attractive or able to attract funding from industry. Clearly, that is not the case for safety related research in a taxpayer-funded research organisation.⁸⁵

Henceforth, any research into possible health impacts of mobile phones or other health issues related to telecommunications would be solely through the NH&MRC's EME committee, ACRBR and its partner Telstra.

It has been argued on many occasions that the best people to involve in research are people with expertise in the field, and most of these people obviously work for industry. This was the argument put forward by Senator Richard Alston, Minister for Communications, Information Technology and the Arts in 1998. As a justification for selecting Dr. Joyner as the radiation advisor to NH&MRC's Expert EME Committee he stated: "If experts who have had any involvement with industry in the past were excluded from participation, it would be almost impossible to establish an Expert Committee."⁸⁶ What Alston didn't mention, however, was why CSIRO and its proven expertise on the issue were not represented on the committee. Senator Alston would have been aware that an expert radiation advisor, or several for that matter, could most likely have been drawn from the CSIRO's Division of Telecommunications and Industrial Physics (TIP). If this had been the case then NH&MRC's EME Committee would have not needed any industry representation in order to do their task. After all, this was of great importance to NH&MRC in 1996 when, as mentioned previously, an NH&MRC senior spokesperson stated: "independence from industry is seen as being of great importance to NH&MRC".⁸⁷ Obviously, from the government's perspective, the advice of Motorola on telecommunications health research issues was preferable to that of independent scientists from CSIRO.

⁸⁴ Senate adjournment speech by Australian Democrat Senator Lyn Allison, in: ADJOURNMENT: Commonwealth Scientific and Industrial Research Organisation, Hansard, Sept 10, 2003

⁸⁵ S. Barnett, 2003. op. cit.

⁸⁶ Mobile Phone Emissions: Research Grants, *Australian Senate Hansard*, p. 2603, May 12, 1998.

⁸⁷ Letter from Richard Morris, op. cit.

Although RMIT University has a conflict of interest policy in relation to individuals, there is no provision for addressing possible institutional conflicts of interests. Therefore no questions were apparently raised about possible conflicts when Telstra became a major part of the ACRBR research team. Ray McKenzie, from Telstra's EME Research & Standards section, was appointed Research Director at ACRBR.⁸⁸ Under the heading of *Distinguished Directors of ACRBR* Dr John Stocker, a Telstra Director, was also listed.⁸⁹ At an October 2004 joint ACRBR/Telstra Workshop, held at the Telstra Research Laboratories in Clayton, Victoria, Professor Mays Swicord was an invited participant. Swicord was referred to as a representative from the Mobile Manufacturers Forum, Geneva and an "internationally renowned RF Bio-effects researcher". Swicord was also a senior scientist for Motorola and has been editor of the *Bioelectromagnetics Newsletter*. According to the ACRBR website this Workshop "provided the ACRBR with an update on international industry and academic perspectives on the Bio-effects Research area."⁹⁰ This is a clear indication of the close partnership between industry and academia where conflicts of interest can morph to becoming a shared interest.

Earlier that year Swicord reported in the *Bioelectromagnetics Newsletter* on the heat shock protein (HSP) workshop held in Helsinki, Finland, in April 2004, which was hosted by Dariusz Leszczynski of the Finnish Radiation and Nuclear Safety Authority (STUK). However, Swicord omitted from his report much of Leszczynski's data that supported a HSP effect even though the findings had been one of the major reasons for organising the workshop. As a result of this significant omission, a group of Bioelectromagnetics Society members called for an editorial board to ensure that this would not occur again.⁹¹ Swicord's omission of inconvenient data confirms Krinsky's observations that corporations on numerous occasions have suppressed study findings that they funded when those findings were in conflict with their commercial interests.⁹²

Institutional conflicts of interests

Most institutional conflict of interest policies deal with individual trust and responsibility, however of greater concern is the lack of safeguards in organisational partnerships, such as those between RMIT University/ACRBR and Telstra. Such safeguards are obviously needed in order to prevent institutional conflicts influencing the representation and interpretation of research results. This problem has been explored by Harold Barnes in his book *"Social Institutions - In an Era of World Upheaval"* (1942). According to Barnes, institutional conflicts of interests can have a far greater impact on an organization than individual conflicts of interests as they set an expected level of behaviour (establish an institutional culture) for all members of the organization. Barnes found that this can affect

⁸⁸ ACRBR website: <http://www.acrbr.org.au/index.php?inc=about/centre/researchdirectors> Accessed June 4, 2007

⁸⁹ ACRBR website: <http://www.acrbr.org.au/index.php?inc=about/centre/distinguisheddirectors> Accessed June 4, 2007

⁹⁰ ACRBR website: <http://www.acrbr.org.au/?inc=community> Accessed June 4, 2007

⁹¹ L. Slesin, 'Industry Rules RF: Controlling Research, Setting Standards and Spinning History', *Microwave News*, July 2004, <http://www.microwavenews.com/IndustryRulesRF.html>, Accessed June 10, 2007

⁹² Krinsky, 2003, op. cit.

the actions of dozens or even thousands of individuals, both within, and outside an organization.⁹³ In relation to universities he found that:

Faculty members depend heavily on the institution's administration for their salaries, promotions, tenure, space, teaching assignments, annual increases, and committee assignments. This power relationship makes it extremely hard for faculty members to be truly independent and objective toward the demands or perceived demands of the institution. This imbalance of influence provides an avalanche of pressure for expediency, conformity [and] intellectual lethargy.⁹⁴

Thus, the institutional conflict of interest issue in relation to Motorola and Telstra employees influencing and directing the research effort at ACRBR would most likely result in an overall research program that conforms to the objectives of these corporations. This situation is clearly reflected by the statement published on conflict of interest in 2006 by the International Committee of Medical Journal Editors (quoted in part):

Conflict of interest exists when an author (or the author's institution), reviewer, or editor has financial or personal relationships that inappropriately influence (bias) his or her actions (such relationships are also known as dual commitments, competing interests, or competing loyalties). These relationships vary from those with negligible potential to those with great potential to influence judgment, and not all relationships represent true conflict of interest. The potential for conflict of interest can exist whether or not an individual believes that the relationship affects his or her scientific judgment. Financial relationships (such as employment, consultancies, stock ownership, honoraria, paid expert testimony) are the most easily identifiable conflicts of interest and the most likely to undermine the credibility of the journal, the authors, and of science itself.⁹⁵

The potential for conflict of interest was also addressed in a national conference titled "*Conflicted Science*" in July 2003, and sponsored by the Centre for Science in Public Interest (CPSI) in the USA. The conference examined how the increasing commercialisation of science is undermining science itself. At this conference, journalists, researchers and university professors from a wide range of fields (from environmental planning to paediatrics to criminal justice) recounted how the commercialising of science was stifling or corrupting their disciplines. The conference concluded that there was a significant societal loss of trust in 'science', even when it came from what appeared to be independent sources. Non-profit organizations, public universities, and health charities, all too often dependent on corporate money, have become the messengers for corporate interests. Investigations by the CSPI has shown that "[t]here is strong evidence that researchers' financial ties to chemical, pharmaceutical, or tobacco manufacturers directly influence their published

⁹³ H. Barnes, *Social Institutions – In an Era of World Upheaval*, New York, Prentice-Hall (1942). Taken from Resnik & Shamoo, *Conflict of Interest and the University* p. 52.

⁹⁴ *ibid*

⁹⁵ Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication, the International Committee of Medical Journal Editors, Section II.D. Conflicts of Interest, February 2006. <http://www.icmje.org/index.html#peer> , Accessed June 10, 2007.

positions in supporting the benefit or downplaying the harm of the manufacturer's product".⁹⁶

Rejecting "counterintuitive" research⁹⁷

One of the research studies considered by the NH&MRC's EME Expert Committee was a study by Dr. Pamela Sykes from Flinders University in Adelaide, South Australia. Sykes' study, funded by the government's EMR Program, involved exposing mice to GSM⁹⁸ cell phone radiation at a power level of 4 Watts per kilogram (4W/Kg). The aim was to test for changes in DNA, one of the issues CSIRO wanted to research had funding been approved. Her preliminary study findings, published in *Radiation Research*, November 2001, found that the exposed mice had fewer DNA changes than expected. Although this might suggest a beneficial or protective effect from the microwave exposure Sykes pointed out in her paper that some proven genotoxic agents can also express this same effect, suggesting that cell phone microwave exposure may be genotoxic.⁹⁹ Sykes then applied to the EME Expert Committee for further funding to continue the investigation with a larger number of mice to see if her finding could be replicated. The review committee turned this request down because they claimed that her preliminary results were "inconclusive" due to the small number of mice used in the initial study and that the findings did not support her original test hypothesis that exposure to RF promotes more DNA breakages than normal in transgenic mice. The expert committee concluded that, as the study found less DNA breakages than what would normally be expected in non-exposed mice, there was no point in conducting further research in this area.¹⁰⁰ This conclusion, however, failed to address the issue of possible genotoxicity that was raised by Sykes. *Microwave News* (2001) notes that the EME committee stated, "[a]lthough it may be interesting, from a perspective of scientific curiosity, to further explore the phenomena...is, however, unfortunately outside [our] scope." The committee then suggested that Sykes re-apply to NH&MRC for a grant that was not specifically tied to RF bio-effects. This application was, however, also rejected. The committee wrote back, stating that while it "recognized the great potential significance of her results", it considered them "somewhat counterintuitive".¹⁰¹

The use of the word counterintuitive as a reason to reject research findings is of concern as it indicates that an assumption had been made that as Sykes' findings did not fit with what would have been expected they did not need to be further investigated. It is expert decision making at a level of 'intuition' or 'common sense' and therefore outside the norms of scientific objectivity. It indicates that a dismissal of the importance of Sykes' preliminary findings was made because it conflicted with the official stand of the Australian

⁹⁶ Health Advocacy Group Warns of Conflicted Science, *Environment News Service*, <http://www.ens-newswire.com/ens/jul2003/2003-07-14-10.asp>, Accessed June 11, 2007.

⁹⁷ Meaning "contrary to what intuition or common sense would indicate", the term 'counterintuitive research' would suggest that the findings of any particular study could not have been easily predicted. For example, if an industry has reached a decision about the level of safety of its product and finds that in fact these precepts are false, these results are said to be counterintuitive.

⁹⁸ Global Systems Mobile

⁹⁹ L. Slesin, 'Wireless Notes', *Microwave News*, vol. 21, no.6, Nov./Dec. 200, p. 8.

¹⁰⁰ ARPANSA, The Mobile Phone System and Health Effects, Part 1 and 2, Health Hazard Assessment, <http://www.arpansa.gov.au/mpm2.htm> Accessed October 29, 2005

¹⁰¹ Slesin, *Microwave News*, op. cit.

government (and industry) as stated in a government fact sheet: “Although there have been studies reporting a range of biological effects at low levels, there has been no indication that such effects might constitute a human health hazard, even with regard to long-term exposure.” And: “The weight of national and international scientific opinion is that there is no substantiated evidence that exposure to low level RF EME causes adverse health effects.”¹⁰² Therefore research findings that ran counter to this frame of reference could be rejected as ‘un-useful’ knowledge.

A comparison can be made here with research conducted by Dr. Ross Adey et al , and published in *Cancer Research* in April 2000. This research exposed Fisher laboratory rats to an RF signal simulating exposures that would be expected in the head of a digital mobile phone user. Overall, the two-year study showed a trend towards a reduced incidence of central nervous system (CNS) tumours in the exposed rats in comparison to unexposed controls, thus indicating a protective DNA repair effect from exposure. Although this could be considered as evidence of danger of mobile phone use causing brain tumours, Adey *et al* pointed out that that the findings needed to be followed up because they indicated a possible non-thermal (low-intensity) effect. To quote: “[T]here is considerable evidence in the literature to support the suggestion that low frequency modulated radiofrequency fields are capable of interacting with biological systems when applied at athermal (non-thermal) levels, involving interactions with key messenger and growth regulating enzyme systems.” Adey *et al* went on to explain that the findings of the study were consistent with an action of the RF fields in lowering tumour incidence and suggested further research into non-thermal exposures.¹⁰³¹⁰⁴ These suggestions cast doubt on the mobile phone industry’s assertion that athermal (low intensity) RF exposures were of no consequence, as there could be no interaction with biological tissue at levels that did not cause heating. Adey’s request to Motorola for further funding to do a replication was refused. Motorola then confiscated all the essential equipment, including field generators and exposure chambers. Adey stated in a sworn affidavit this was done “to ensure that we could not pursue any further studies”.¹⁰⁵

Considering that a standard practice in science is to replicate of a study in order to establish a biological effect, it could be surmised that further research to explore possible biological effects from low intensity RF exposure did not suit Motorola’s interests. With both Sykes’ and Adey *et al*’s research, the unwillingness to attempt a replication of scientific findings of an effect (protective) between RF exposure and DNA suggests the findings were “counterintuitive” to strongly held beliefs that there can be no biological effects from RF exposures below the heating threshold.

As Jasanoff (2005) pointed out, political controls over science are pervasive in restricting scientists’ “ability to pursue certain lines of inquiry, the conditions under which their advice is sought, and the extent to which research trajectories are subordinated to political

¹⁰² ARPANSA, Fact Sheet, EME Series, No. 1, Electromagnetic Energy and its effects, November 2003.

¹⁰³ R. Adey, et al., ‘Spontaneous and Nitrosourea-Induced Primary Tumors of the Central nervous System in Fischer 344 Rats Chronically Exposed to 836 MHz Modulated Microwaves’, *Radiation Research*, vol. 152, Sept. 1999, p. 293-302.

¹⁰⁴ L. Slesin, ‘Digital Cell Phone Signals: Protection Against Brain Tumors’, *Microwave News*, p. 13, Sept./Oct. 1999.

¹⁰⁵ Correspondence from Ross Adey to this author, January 7, 2004.

imperatives...".¹⁰⁶ It can be argued that this was certainly the case with the government's removing CSIRO from the issue and establishing a research effort under the firm guidance of the telecommunications industry.

Concluding discussion

The deeply embedded conflicts of interests that have been established over the past decade in Australia are not limited to telecommunications policy. Hamilton and Maddison's book *Silencing Dissent* (2007) exposed how from 1996 to 2007 the federal government systematically undermined dissenting and independent expert opinion in many areas of scientific debate. This is amply illustrated in the area of telecommunications policy as examined herein. In effect, the government pursued a style of policy-making where science was stifled where it failed to conform to government policy, which ran parallel with industry policy. This situation is not unique to Australia as can be seen in the Union of Concerned Scientists' 1990 statement "*Restoring Scientific Integrity in Policymaking*", signed by over 11,000 American scientists who were concerned over their government's suppression of science. To quote:

When scientific knowledge has been found to be in conflict with its political goals, the administration has often manipulated the process through which science enters into its decisions. This has been done by placing people who are professionally unqualified or who have clear conflicts of interest in official posts and on scientific advisory committees; by disbanding existing advisory committees, by censoring and suppressing reports by the government's own scientists; and by simply not seeking independent scientific advice. ... The distortion of scientific knowledge for partisan political ends must cease if the public is to be properly informed about issues central to its well being, and the nation is to benefit fully from its heavy investment in scientific research and education.

In order to correct this situation the statement called on the scientific community to:

- Bring the current situation to public attention.
- Request that the government return to the ethic and code of conduct which once fostered independent and objective scientific input into policy formation.
- Advocate legislative, regulatory and administrative reforms that would ensure the acquisition and dissemination of independent and objective scientific analysis and advice.¹⁰⁷

A challenge now exists for current Australian government. Does it have any interest in reversing the pattern of suppression of science by actively implementing a realistic conflict of interest policy for government funded research? That challenge is to prioritise the re-establishment of an objective and independent scientific research organization in order to

¹⁰⁶ S. Jasanoff, In *Democratization of Experts? Exploring Novel Forms of Science Advice in Political Decision Making*. Ed. Maasen and Weingart, Springer. Chapter 11, *Judgement Under Siege: The Three-Body Problem of Expert Legitimacy*, pp. 209-224, 2005.

¹⁰⁷ Union of Concerned Scientists, http://www.ucsusa.org/scientific_integrity/interference/prominent-statement-signatories.html, Accessed June 12, 2007.

benefit public health rather than protect the economic concerns of an industry sector. To quote Korn (2000) again:

Conflicts of interest are ubiquitous and inevitable in academic life; indeed, in all professional life. The challenge for academic medicine is not to eradicate them, which is fanciful and would be inimical to public policy goals, but to recognize and manage them sensibly and effectively.¹⁰⁸

It has to be acknowledged, however, that as well as producing serious conflict of interest issues, government/university/industry research partnerships can provide real benefits in the areas of funding, improved education, and practical and applied science to name but a few¹⁰⁹. However the blatant conflict of interest excesses as exemplified in this article reveal the inevitable pitfalls of blending academic and industry research, especially when that research has the potential to adversely impact on the industry partner's operations. Krimsky sees that the only viable solution to conflict of interest in research is a separation between those who produce knowledge and those who stand to benefit financially from that knowledge. According to Krimsky:

The scientists we rely on to assess toxic substances, therapies, drugs, consumer products ... should not be drawn from the same pool of experts who have a financial stake in the success or failure of those products.¹¹⁰

The challenge is how to avoid blatant conflicts of interests, which arise when an industrial sector is allowed to be actively involved in the task of researching the possible health hazards from their products. This applies to academic institutions, Centres of Excellence and government research agencies, (such as the CSIRO). This is apparent with the involvement of a Motorola strategist on the NH&MRC EME Committee, the partnership between ACRBR and Telstra and the changes forced on CSIRO by the previous federal government. The following are sensible actions that could be taken at a political level, provided there is the will to do so:

- Support the establishment of independent and external university review boards who must disclose any possible conflicts of interest that may influence the decision-making process. These boards would function like independent ethics boards and be composed of people not employed by the university or industries directly affected by board decisions. One of their roles could be to monitor possible conflicts of interests in university/industry partnerships. Such a board would be external to the university in order to be able to objectively police conflict of interest policies when the interests of the university and their industry partner are closely aligned.¹¹¹

¹⁰⁸ D. Korn, 'Conflicts of interest in biomedical research', *JAMA*, vol. 284, no. 17, Nov.1, 2000, pp 2234-2237.

¹⁰⁹ D. Resnik, A. Shamoo, 'Conflict of Interest and the University', *Accountability in Research*, vol.9, pp. 45-64.
s. ¹¹⁰Krimsky, 'A conflict of interest', *New Scientist*, August 30, 2003.

¹¹¹ For a fuller discussion see: H. Moses H, J. Martin, 'Academic Relationships With Industry: A New Model for Biomedical Research', *JAMA*, vol. 285, no. 7, Feb. 21, 2001, pp 933-935.

- Establish firm “firewalls” between different departments of universities and within other research organizations in order to prevent department/industry financial partnerships from influencing any other department’s health orientated research programs¹¹².
- Establish a strong conflict of interest policy for all NH&NRC advisory committees to ensure that industry representatives or former industry employees will be barred from having any influence in decisions affecting that industry.
- After ACRBR concludes its current activities, transfer the role of future non-ionising radiation research back to the CSIRO or an independent Centre of Excellence and provide government funding to monitor non-ionizing radiation (NIR) health issues independent of industry influence. Funding should not be tied to any industry partnerships or control over how funding is to be spent.

¹¹² Resnik, Shamoo , op. cit.