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MESSAGE FROM THE VICE-CHANCELLOR AND PRESIDENT

This report is an illustration of Victoria University’s growing research program and an affirmation of the University’s commitment to building a coherent, co-ordinated research profile.

As a University, we are now starting to realise the full impact of the Federal Government’s policy directions which are imposing enormous demands on universities, on business, industry and the wider community during a very challenging period in world history. More than ever, we are living in an age that is calling for creative thinkers who are able to devise global solutions. Countries like the United States, Japan and Ireland with exemplary investments in research, have clearly recognised this. We should remain positive in the hope that Australia will give education and research precedence on the national list of priorities.

The University has pursued a strategic approach in its research agenda, and has been rewarded with success. In recent years, the University has worked concertedly to identify and harness its research strengths which form the basis of strategic research areas in the fields of: economics; sport science; medical biotechnology; bioprocessing and food technology; packaging, transportation and storage; tourism; social diversity and community well-being; fire safety and risk engineering; and telecommunications and microelectronics. These entities not only identify areas of research excellence at Victoria University, but they enable the cross-fertilisation of ideas that is already seeing the University acknowledged for its achievements.

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MESSAGE FROM THE VICE-CHANCELLOR AND PRESIDENT

Professor Jarlath Ronayne, Vice-Chancellor and President

INTRODUCTION BY THE PRO VICE-CHANCELLOR, RESEARCH AND DEVELOPMENT

In recent years, the University has worked concertedly to identify and harness its research strengths which form the basis of strategic research areas in the fields of: economics; sport science; medical biotechnology; bioprocessing and food technology; packaging, transportation and storage; tourism; social diversity and community well-being; fire safety and risk engineering; and telecommunications and microelectronics. These entities not only identify areas of research excellence at Victoria University, but they enable the cross-fertilisation of ideas that is already seeing the University acknowledged for its achievements.

Applications for funding under the Commonwealth Government’s Linkage Scheme for 2002 achieved a 41% success rate at Victoria University, a significantly higher level than some of its nearest competitors. Similarly, the University experienced a relatively major increase in CRC funding which now accounts for almost 10% of its external research income, a marked improvement on previous levels. These are tremendous achievements not only in terms of University funding and future research but as a reflection of the energy and the endorsement of our business, industry and community partners.

The University can also feel proud that it has been awarded Federal Government funding of $2 million for its Large Scale Experimental Building Fire Facility, and is a co-investor in a successful Major National Research Facilities Grant for the National Networked Tele-Test Facility for Integrated Systems. Success in these highly competitive grant schemes is much sought after which elevates the strength and the national competitiveness of the University’s areas of research excellence.

The University’s publication output has also increased significantly in 2001, with peer-reviewed publications constituting a large proportion of this growth. This improvement is a notable one in relation to benchmark universities, advancing the University’s ranking significantly.

Our postgraduate researchers are seedling the University’s strategic research areas with energy and new ideas which will ensure the quality of the next generation of researchers and the outcomes they are able to produce. Doctoral examinations at Victoria University over the past three years reflect the calibre of our higher degree research students. According to 2001 data, the majority of these graduates were employed, with most holding positions closely related to their field of study.

Some of our research highlights are described in the following pages. I commend to you the 2001 Research Report.

Professor Vaughan Beck, Pro Vice-Chancellor, Research and Development
WILL YOU AWAKEN TO A FIRE IN YOUR HOME?

If there was a fire in your home tonight, would you and/or your loved ones wake up in time? Associate Professor Bruck and her team have conducted a series of unique experiments on this question and are now working on an innovative, improved alarm.

Their studies have found that most adults who are unimpaired (ie sober and not on sleep inducing medication) will wake up quickly to an alarm sounding in the hallway adjacent to the bedroom (60 dBA). However young adults (18-24 yrs) who are partially sleep deprived (as many students seem to be) will not reliably arouse to a 60 dBA alarm. Of particular concern was the finding that only 6% of children aged 6 to 15 years consistently woke to a 60 dBA alarm. Following the principle that louder will be better, an alarm was placed directly over the children’s bed (90 dBA). Even so, 70% of the younger children (6-10 years) slept through the alarm. In contrast less than 30% of the older children (11-15 years) slept through. Thus, for a home with younger children it is important that the alarm placement will awaken adults – even if the fire starts near the children’s bedrooms. One solution may be to interlink alarms and sensors.

Information on response to smoke alarms is of considerable interest to performance based models of fire risk. The building industry now uses such models (eg as developed by CESARE) to design buildings of low fire risk. Thus the data on likelihood of awakening is of direct use in predicting fire risk in a building with certain characteristics.

Given that working alarms are not always present, knowledge about people awakening to the cues of fire itself – sound, sight and smell – is also of importance. It was found that with low level sound fire cues (eg crackling) woke people readily, while only half the sleepers awoke to a flickering light and smoke odour. Interestingly, males were more likely to sleep through the odour than females and this is consistent with other literature that females have a higher sensitivity to low level smells than males.

Work is currently progressing on developing a new alarm signal that has more emotional and cognitive significance than the current beeping alarm and, it is hypothesised, will be more likely to awaken those currently at risk. The key risk groups for those unlikely to awaken to a fire are young children, those who are sleep deprived, under the influence of alcohol, taking sleeping tablets and people with high-frequency hearing loss (typically associated with ageing). Funding from the Australian Research Council, Building Control Commission, Fire Code Reform Centre and OneSteel has enabled this work to proceed.

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FIRE SAFE CONSTRUCTION IN TIMBER

Research at the University has led to major regulatory reform of building fire regulations in Australia for the past 10-15 years. This research included a PhD project undertaken by Dr Scott Young to develop a computer model to predict how and when light timber-framed wall structures collapse in fire. Light timber framing is the most extensive form of building construction familiar to most people. However, the model has been incorporated into a larger model which can be used to design fire-safe light-timber framed buildings. Throughout this project, Dr Young received much praise for his research nationally and internationally which culminated in a Vice Chancellor’s Citation for Excellence in Research in 2001.

The project was undertaken through the collaboration of CESARE and the School of the Built Environment, both of which are in the Faculty of Engineering and Science. The supervisors were Professor Vaughan Beck and Dr Paul Clancy. The larger model involved supervision by Dr Bob Leicester, Chief Research Scientist, CSIRO Division of Building, Construction and Engineering. In the year 2000, Dr Bob Leicester was awarded the Kollonberg prize by the King of Sweden, HM King Carl XVI, for his pioneering work in building performance and safety.

Dr Young’s research project commenced with an Australian Postgraduate Industry Award scholarship granted by the Australian Research Council. This award was made possible with the contribution of $50,000 by the National Association of Forest Industries.

The research project also involved an extensive experimental program. Eight full-scale walls were furnace-tested at BHP-Research Melbourne Laboratories. Thirty full-scale walls were tested in ambient conditions at laboratories at CSIRO Division of Building, Construction and Engineering, Highett, Victoria. Many small scale material property experiments were undertaken at University laboratories. One of the many interesting observations made in these experiments was that, under heat and moisture, timber can be moulded much like plastic.

Discoveries from centuries ago can be forgotten. Fire was used to bend the heavy timber ribs of galleons. Some simple measures are likely to make a difference, based on the findings of the study: Firstly, don’t smoke, particularly in bed or when sleepy; ensure that the very young and very old do not have the means by which ignition can occur (whether accidentally or on purpose); ensure there is always a usable escape path that cannot be blocked by a fire, in every room; ensure that the environment for the bedridden, or otherwise physically or mentally impaired, is extremely unlikely to result in ignition of a fire; and ensure that clothing does not ignite and that extremely flammable materials (such as volatile liquid fuels or cleaning agents and foamed plastics) do not ignite.

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One of the central issues facing Australia – how trends in the labour market, relating to jobs and the earnings they generate, may be driving fundamental social division in this country – was investigated in a recent book published by the Centre for Strategic Economic Studies (CSES). While the issue is complex and has many dimensions, one main conclusion of this study is that these forces are indeed generating deepening division within Australia. This finding in turn raises central questions about the emerging nature of Australian society and about our strategies for economic and social development.

Given the importance of the issue, the Centre assembled, under the banner of the Australian Research Council’s Strategic Partnerships with Industry – Research and Training (SPIRT) program, leading economists from the Australian National University and The University of Melbourne to work with the Victoria University team on these issues, with the support of a distinguished group of industry partners.

The core team consisted of three joint chief investigators, Professor Bob Gregory of the ANU, Associate Professor Jeff Borland of The University of Melbourne and Professor Peter Sheehan of the Centre for Strategic Economic Studies at Victoria University. The industry partners, who contributed in cash and/or in kind, were the Australian Council of Social Service, the Brotherhood of St Laurence, the Strategic Industry Research Foundation, the Australian Institute for Family Studies and the Productivity Commission. The support of the Henderson Foundation, and through it that of the Pratt Foundation, was also vitally important for the success of the project.

The initial results of this project were reported and discussed at the conference Earnings Inequality in Australia held in Melbourne in August 1999. While the project has focused mainly on empirical analysis rather than policy development, the conference involved a policy forum, where Ralph Willis, Nick Gruen, Alison McClelland and Sue Richardson explored the policy implications of these emerging trends.

Nevertheless, and in spite of contributions at the conference and elsewhere, the policy task in regard to these issues remains far from completed. There is little doubt that Australia is becoming a deeply divided community, and that these divisions are being driven by economic change and by the growing polarisation of the community into work rich and work poor. These are no longer marginal issues related to the labour market. Rather, they raise deep-seated questions about what sort of society Australia is becoming, how economic trends influence social development and how economic and social policy can affect outcomes. Thus the policy issues raised by the increasing division into work rich and work poor go to the heart of our strategies for achieving competitiveness and social viability in a rapidly changing world.

Topics specifically discussed included:
- Inequality and economic change
- Family income inequality
- The causes of increased earnings inequality in the international literature
- Immigrant employment and economic change in Australia
- The labour-market experiences of immigrant women
- Low-paid employment in the Australian labour market, 1995–97
- The polarisation of families
- Job stability and job security
- Precarious employment and occupational change
- Earnings inequality and skill
- Technology, skills and earnings inequality

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that consumers have positive perceptions about brands. Globally firms are pouring millions of dollars into developing and promoting goods that are less environmentally harmful. The question is, do consumers interpret the information as anticipated?

While marketers and researchers usually assume that consumers understand the information provided to them rather than focusing on how researchers or firms believed consumers evaluated information. The project involved products and consumers from Australia, South Africa, USA and South Korea. Researchers examined what types of environmental information were in fact conveying. Consumers felt that products that promote themselves as “safe on one’s hands” or “chemically free” were in fact conveying environmental information.

The results of Professor Polonsky’s team are that this is not always the case at all. In terms of the use of environmental information, it was found that there are vast differences in the way information is communicated globally, or at least in terms of how consumers around the world evaluated what information they were exposed to. While marketers in some countries focus on hard scientific information, others tend to give consumers broad statements such as “good for the environment”, which have little meaning and thus potentially have limited benefit to the firm in positioning itself as being environmentally responsible.

Interestingly, the researchers found that consumers are interpreting a range of information as conveying environmental meaning that may not have been intended to do so. For example, consumers felt that products that promote themselves as “safe on one’s hands” or “chemically free” were in fact conveying environmental information.

When asked why, consumers suggested that “if it doesn’t hurt your hands then it must not harm the environment”. Other information that might have been considered to give extensive environmental information was found potentially to be ineffective. For example, consumers were concerned that firms who promoted themselves as winning environmental awards, without explaining why they had won, were potentially trying to mislead consumers.

The implications of the study reinforce the fact that consumers interpret information about firms’ environmental activities in potentially different ways than is anticipated. As such, firms need to take care if they presume too much about their consumers. The project was partly funded by an American Advertising Fellowship as well as supported by grants from several of the authors’ institutions.

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The findings revealed that for some jockeys, retirement from riding was seen as an opportunity for personal growth and development, a time to engage in family commitments, or extend social networks. For a significant number of other jockeys, however, retirement had at times been a very stressful period of their life, characterised by limited employment opportunities, financial hardship, poor physical health, and/or emotional distress. Although these difficulties were eventually overcome by some jockeys, there were those who continued to struggle in life, long into their retirement period. This result is perhaps not surprising, given that retirement for most jockeys (>70%) was sudden and unplanned, because of injuries, weight problems, or lack of rides. Very few retired jockeys had contemplated life beyond a riding career before their career ended, and even fewer had a retirement plan in place at the time of their retirement.

One of the key recommendations from the research was that the racing industry utilise innovative approaches and educational networks to provide retired and current jockeys with opportunities for the... psychological counselling services, and a mentoring scheme that utilises the experiences and knowledge of former jockeys.

Following these recommendations the Victorian Racing Industry and the Australian Workers' Union have initiated measures to improve the situations of retired, and retiring, jockeys. Funding for this project was provided by the Victorian Government Office for Racing in collaboration with the Victorian Jockeys' Association, 2001.

Retirement is a part of life. In the general workforce, retirement is usually by choice and is associated with prior planning and preparation, to provide income sources for future needs and set up alternative lifestyle choices. Research has shown that successful adjustment to retirement can exert an important influence on the overall health and well-being of the individual.

A recent study, led by Dr Harriet Speed from the Centre for Rehabilitation, Exercise and Sport Science (CRESS), examined retirement planning and adjustment in a population of professional athletes that has received little attention from researchers, that of jockeys in the horse-racing industry.

The career of the professional jockey is one of long hours, strict discipline and high-risk to personal health. Every day jockeys are faced with the requirements to maintain weight and fitness, and with every ride, in track work and racing, there is the risk of career-ending injury. For jockeys, retirement may come at any time, and without warning. And, for jockeys who are fortunate enough to have a long career, their physical condition upon retirement is likely to have deteriorated, due to the stringent demands imposed by sustaining a riding career.

The investigation comprised a series of four studies that explored: (1) current trends and issues in the retirement of jockeys in Victoria, from the perspectives of both retired jockeys and jockeys currently engaged in the sport, and (2) retirement support services and strategies made available to jockeys by racing bodies in Victoria and elsewhere, and to the athletes of other sports by their corresponding sporting associations.

RESEARCH TEAM:
Dr Harriet Speed and Professor Tony Morris, Centre for Rehabilitation, Exercise and Sport Science (CRESS) and School of Human Movement, Recreation and Performance, Professor Terence Seedsman, ALMA Unit for Research on Aging.
EXERCISE AND CALCIUM:
MAKING AN IMPACT ON GROWING BONES

Preventing osteoporosis is becoming more important, especially as the population ages. The size and strength of the skeleton in old age is determined by how much bone is laid down during growth and the amount of bone lost in later life. Building a bigger skeleton during growth may be more beneficial in preventing osteoporosis than tackling the problem in old age. Weight-bearing exercise and enough calcium both have a positive effect on bone. The benefits of the two combined have not been studied in children.

The research team designed and implemented a year-long school-based exercise and calcium intervention program that was incorporated into the existing school curriculum. The 88 girls involved in the study participated in three 20-minute activity sessions each week. The sessions were either high or low impact. They also consumed 10 food products a week that they selected from a variety of muffins, cookies and muesli bars. The foods were either placebo (no calcium) or contained calcium in the form of added milk minerals. The foods were produced weekly at the Royal Children’s Hospital and delivered directly to the school.

The results of the program were extremely promising and showed a positive effect on bone. The benefits of calcium were seen at the non-weight bearing sites (arms), and exercise had a positive effect on the legs. Exercise and calcium combined were beneficial to the upper leg bones.

The novelty of this project was that the exercise was monitored using a portable force measurer worn in the shoe, and extensive video analysis. This provided direct assessment of the magnitudes of impacts and the most beneficial exercises for bones. In addition, the calcium was incorporated into foods to make the supplementation reflect normal eating patterns of children.

The results from this study can provide the basis for curriculum changes to incorporate “healthy bone” activities into physical education and sport classes. Food fortification may be another avenue through which bone health in children can be improved. The remaining step is to follow up the girls after the program has finished to determine if the benefits are long lasting. If so, we may be on the way to finding a way to optimise bone development and to contribute ultimately, to a reduction in the occurrence of osteoporosis.

This project was supported by the Dairy Research Development Corporation and Murray Goulburn Co-op Pty Ltd.

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BUILDING COLLABORATIVE RELATIONSHIPS
THROUGH RECREATION PROGRAMS

Partnerships, collaboration and relationships are common strategies in the fields of business, education, community and government. Increasingly partnerships are seen as the mechanism for agencies to work together to address common issues or achieve complementary goals. Within the community sector the development of collaborative relationships helps to create the community fabric through which community agencies serve the public. These relationships create a tightly woven network that supports the economically, socially and culturally disadvantaged sectors of Victoria’s population.

Even though there is a consistent call for agencies to work together by investigating the factors that are important in the management of collaboration between different community groups.

In 2000, The Victorian Health Promotion Foundation (VicHealth) contributed nearly 3/4 of a million dollars to fund 38 recreation programs across Victoria to address the health needs of disadvantaged communities. A key requirement for the funded projects was to have a partnership with an agency from another sector, e.g. community health and recreation services, working together. The partnerships were expected to assist in the development of the social fabric that supports communities across the state.

John Tower has worked with VicHealth since 1999 in the development of the recreation funding program. His interest in understanding the nature of relationships among agencies led to the research project that was established to understand how agencies manage partnerships.

The research involved a two-staged process. Initially unstructured interviews gauged the relevance of a range of factors that the literature suggested might be relevant in the management of the partnerships.

The results from this study can...
One such area is in Space-Time Measurements, whereby an indoor wireless channel measurement program has been carried out by using a mechanically positioned transmit antenna and a fixed, but electronically switched, receiver array. A software Graphical User Interface (GUI) has been designed and displays the measurement results.

Transmitter and Receiver Algorithms are also being studied. Baseband digital beam-forming uses Digital Signal Processing (DSP) to adjust antenna gain and phases for beam-steering. Future work will include adaptive channel estimation / equalisation and algorithms for MIMO and other space-time systems.

In addition, there will be some consideration of practical implementation issues related to antenna calibration and signal dynamic range reduction. The latter is expected to be a major problem in future 3G/4G implementations.

Smart Antenna Network Performance, whereby the capacity of a cellular CDMA (Code Division Multiple Access) system was investigated taking into consideration both intra-sector and inter-sector interference, is another area of research. The influence of sector size variation to accommodate hot-spots in traffic distribution was investigated. Simulations show there appears to be little gain in reducing the sector size below 60° even if the hot spot is confined to a narrow angle. This work is of interest to mobile telecommunication operators.

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In 2000, the rhetoric of the coup leaders about indigenous land rights also brought to the surface disputes over resort-based tourism and contested land ownership. The 2000 coup led to a number of hostage-taking incidents in prominent tourist resorts, notably Turtle Island which epitomises Fiji’s most exclusive boutique resorts.

The terrorist attacks of September 11th, 2001 in the USA had a surprising side-effect on tourism in Fiji. Suddenly the attention of the main tourist generating countries was drawn to the world stage and away from events in Fiji. As if by default, Fiji resumed its earlier status as a tranquil haven far from the totems of world capitalism and over-development.

The research programme forms an integral part of the partnership between Victoria University and the University of the South Pacific as part of a European Union-funded initiative to develop a Centre of Excellence for Tourism Studies. The partnership involves a collaborative effort to enhance the quality of research into key South Pacific tourism issues, co-supervision of doctoral students and staff exchanges.

Professor King was previously a Visiting Professor and is currently External Assessor for the University of the South Pacific Tourism Studies Programme. The research findings described in this report have attracted interest at the World Tourism Organisation and the Fiji Visitors Bureau and have been published as conference papers in Korea and Australia and in Travel and Tourism Analyst and the Journal of Hospitality and Tourism Management.

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Tocovite Pty Ltd has recently demonstrated that their new form of Vitamin E passes through the skin up to twenty times more readily than any other current Vitamin E preparations. We are now working with Tocovite to extend their technology to pharmaceutical rather than health care products.

In collaboration with Monash University, we are preparing a range of drug formulations and testing their dermal efficacy on animal models. As part of this work we are also conducting research into the biochemistry of a number of vitamins and hormones to better understand the way in which they are transported and stored within the body. This work will lead to tailored delivery systems, with significantly higher bioavailability, for a range of important pharmaceutical products.

All of this work is, and has been for many years, funded by Polychip Pharmaceuticals, a subsidiary of Circadian Technology Pty Ltd and by Tocovite Pty Ltd.

Our research over the past five years has focused upon developing new methods for the synthesis of important pharmaceutical products. Using microorganisms, such as yeast and other enzymes, we have been able to invent a new process for the preparation of ephedrine and pseudoephedrine, the active ingredients in cold and flu tablets. These new processes involve the use of non-conventional solvents for these reactions. In particular we have utilized supercritical carbon dioxide as an environmentally friendly alternative to organic solvents. Current work in this area is aimed at the preparation of Prozac, ibuprofen and related compounds.

More recently we have been examining the drug delivery process. The bioavailability of some oral drugs is as low as 5%, as much of the active ingredients fail to pass through the stomach and/or intestine. Dermal delivery (through the skin) is potentially a better, faster and more controllable route for drug delivery, and patches are already widely used in the HRT and nicotine areas.

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Forensic science is used to investigate various crimes and encompasses a broad range of techniques including pathology, fingerprinting, balistics and DNA typing. DNA profiles from samples at a crime scene are compared with genetic profiles of suspects or of convicted criminals. These techniques rely on other means, such as eye-witness accounts and other evidence to locate a number of suspects who can be tested. The majority of DNA typing uses non-coding regions of the human genome that do not reveal information regarding the physical characteristics of a person (except for gender). A problem arises in crimes where there are no known suspects, no eye-witnesses to a crime, and no other clues about the identity of the suspect. What sort of person should the police look for? An example of this is the shocking Wee Waa case in 1999, where an elderly 91-year-old woman was brutally raped and bashed. After a year-long investigation without results, the police appealed to all Wee Waa men to voluntarily submit saliva samples for DNA testing. Approximately 500 men volunteered, and finally a farm labourer’s DNA profile was found to have an exact match that from semen left behind by the rapist.

This raised intense debate about the ethical and privacy issues involved in massive DNA testing. If the police had had some description of what the culprit looked like they might have been able to narrow down the search and test only a few men. Our project addresses this problem. We aim to use known genetic information to predict visually identifiable physical characteristics. Useful ones include height, weight, age, colour of the hair and eyes and attached earlobes. Our investigations so far have focused on genes determining hair and eye colour. The red hair phenotype has been linked to variations in a gene called the MCT1R, but not many studies have been done to see if this gene is also linked to blonde hair, eye or skin colour. We are presently conducting these studies as well as looking at another pigmentation gene called the P-gene.

The project is being funded by an Australian Research Council’s SPIRIT grant from the Australian Government and is carried out in collaboration with the Victoria Forensic Science Centre. Results of the work have been presented at various Forensic Symposia, received an Excellence Award for the poster presentation at the 16th International Forensic Science Symposium in Canberra, and attracted much interest from media such as The Australian, Sydney Morning Herald and ABC Radio. Much work still remains to be done in this area.

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Plastics constitute a significant and increasing proportion of materials used for the packaging of foodstuffs. Indeed, for many applications the use of plastics may be the only economically viable way of ensuring the safe storage and distribution of food. The latter are issues of immense importance to modern society. It is unavoidable that plastics used for food packaging contain small amounts of chemical substances that, although present at levels harmless to human health, may migrate into the foodstuff and diminish its quality. Sometimes synthetic additives such as processing aids and antimicrobial agents, or undesirable substances originating from thermal degradation during processing or recycling, can migrate into the packaged food.

Current research at Victoria University on the packaging of foodstuffs focuses on three inter-related areas. First is the development of active systems where the packaging material interacts with the packaged food. The results obtained so far suggest that the natural compounds can be used as safer, cheaper and more efficient alternatives to the synthetic substances currently in use.

Another research area is the incorporation of inert materials, such as zeolites, into plastics, as a means of absorbing potential contaminants that may cause odoriferous tainting (undesired flavouring) of foodstuffs. Both natural and synthetic zeolites, together with mixtures of these, are being investigated with a view to tailoring the absorption characteristics of these inert systems to match the spectrum of contaminants in the plastic.

The utilization of recycled materials has created much interest in producing recycled plastics that meet food packaging quality and safety standards. Our present knowledge of the migration of contaminants from recycled materials into foodstuffs is quite limited, and so research is now underway at Victoria University to measure the migration rate of identified trace-level contaminants in recycled polyester (PET) material. This study is providing the packaging industry with valuable data that can ultimately be used to confirm the safety of food products packaged in recycled materials.

The research portfolio is highly supportive of the Australian packaging supply chain in identifying novel ways of meeting multi-level packaging requirements, such as safety, convenience, efficiency and minimization of environmental impact. Victoria University, in conjunction with RMIT and Birubi Innovation Ply Ltd, is currently establishing a national science and technology platform to underpin the development and implementation of sustainable packaging systems. The research on active and recycled plastic packaging is of significant importance to the development and implementation of this initiative.

The projects are supported by Visy Industries and Signum. Student scholarships have been provided by courtesy of AusAid, The Royal Thai Government and The Government of Indonesia.

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Improved quality assessment of sultanas is being made possible through research undertaken at Victoria University’s Werribee Campus by Dr. Millikan’s research group. Light golden sultanas, bringing premium prices, are a multi million dollar export industry. Australia is sixth in the world after the United States of America, followed by Turkey, Iran, South Africa and Greece, as a producer of sultanas. Australian sultanas are dried Thompson seedless grapes that have been dried mainly on racks in the shade to retain their light golden colour. This is in contrast to American processing methods where sultanas are bleached in an atmosphere of sulfur dioxide. Hence colour is not as critical an assessment parameter in America as it is in Australia.

Sultanas are colour graded on a scale of one to seven, seven being 100% light golden berries whereas number one is a mixture of berries ranging in colour from green, red-brown, golden to dark brown. Unprocessed sultanas are assessed subjectively by trained personnel, who grade them primarily for colour, moisture content and freedom from vine contaminants. Moisture measurements are made on samples from each grower’s bins. This process is slow and time consuming, but is an essential measurement, since sultanas are required to be dried to a moisture content of approximately 13% for delivery to the packing sheds.

The focus of the research is to replace the subjective assessment by a rapid objective instrumental technique, and to develop a predictive test to determine the browning potential, as an indicator of storage stability at the time the samples are received. This is a critical issue because if the sultanas darken on storage then they are downgraded to a lower colour value.

Research at Victoria University has determined key factors that contribute to sultana storage browning. Percentage moisture is an important parameter that is directly related to enzymatic and non-enzymatic or Maillard browning. Instrumental predictors of browning potential have also been established. Sultanas are scanned, non-destructively using a Near Infrared/Visible instrument. Hence, it is possible to assess a number of different quality parameters at the same time, provided there is corresponding laboratory data. A large number of diverse samples, over several seasons, is required to allow for climatic effects. The laboratory data is then correlated with the Near Infrared data to produce calibration curves to quantitatively analyse sultanas rapidly, without any sample preparation. Preliminary testing of the instrument calibrations is currently being undertaken in the Industry Quality Centre, prior to the implementation by the industry.

The industry outcome is to have a rapid and objective method of assessment for unprocessed sultanas, so trained assessors are no longer required to grade the sultanas for grower payment. In turn, this will modernize processing operations for sultana production, cut costs and assist the industry to be more efficient and competitive, allowing Australia to increase its share of the global export market.

Two research grants have been awarded for this research from the Dried Fruit Research and Development Council (Rural Industries Research and Development Corporation), and a third from Dried Fruit Research and Development Council (DFRDC) and the Victoria University Postgraduate Scholarship Scheme. The DFRDC is now administered by Horticulture Australia Limited.

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This study, commissioned by The Victorian Aquaculture Council Inc., evaluates the opportunity to develop the aquaculture industry in Victoria, Australia. The country accounts for only 0.18 per cent of world fishery production and 0.12 per cent of world aquaculture production. However, Australia’s aquaculture sector is expanding rapidly and the aquaculture sector’s share of total fishery production increased from 7 per cent in the early 1980s to nearly 30 per cent by 2000.

Also, contrary to popular perception, Australia is a relatively small exporter of fishery products, and is highly reliant on the export of a small variety of seafood products to a few countries. About 75 per cent of Australia’s exports go to Japan, China and Taiwan and this is primarily made up of rock lobsters, prawns and tuna. However, Australia’s fishery exports to these countries are predominantly produced through aquaculture farming and this obviously demonstrates the importance of aquaculture farming to export growth.

The study suggests that commercialisation in the industry has proceeded relatively slowly. For example, although by the year 2000 more than 70 species had been introduced in Australia for aquaculture farming, most of these species are at various stages of trial and commercialisation. Five species (turbot, salmon, oysters, prawns and trout) accounted for more than 95 per cent of the value of Australia’s aquaculture production in 2000.

Significantly, Victoria’s aquaculture industry is even less developed than that of most other States in Australia. The share of aquaculture to total fishery production in Victoria is only about 15 per cent (compared with a national average of 30 per cent). Nonetheless, Victoria is Australia’s largest producer of species such as trout, blue mussels and eel through aquaculture farming. Overall, the aquaculture industry in Victoria has not kept pace with the development of the industry nationally. Production and ex-farm prices for aquaculture products in Australia have progressively increased whereas production and ex-farm prices in Victoria have fluctuated and tended to show a downward trend. However, following sharp falls in the quantity and value of production in 1997–98, production levels in Victoria have increased, but production values have continued to fall, thus suggesting that Victoria is more reliant than other States on lower value products.

Growth of Victoria’s aquaculture industry is constrained by issues of water availability (because of drought conditions) and water quality. These problems have, in recent years, severely curtailed the production of eels, yabbies and salmonoids.

Victoria seems capable of competitively producing a number of fishery species through aquaculture. The study indicates that ex-farm prices of eel, mussels, oysters and abalone match import prices and/or prices from wild catch fisheries. In the case of some products such as abalone, wild catch production has matured (because of licensing restrictions) and there is potential for aquaculture to supplement production.

The study concludes that the aquaculture industry in Victoria has to address several regulatory, environmental, physical and social barriers before it can develop and contribute more significantly to the economy.

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LOW FAT MOZZARELLA CHEESE FOR HEALTHY PIZZAS

Recent surveys have shown that consumers are becoming more aware of consumption of particularly saturated fat from cheeses and other dairy products. The demand for low fat or no fat mozzarella cheeses is on the rise due to apprehensions by many consumers about dietary milk fat intake. Sales of low fat cheeses (other than mozzarella cheeses) have recently increased by 19%. There is no commercial low fat or no fat mozzarella cheese on the market. Low fat mozzarella cheeses with improved melting and textural characteristics could find an important market in the pizza industry and could improve the image of pizza (other than mozzarella cheeses) have recently increased by 19%. There is no commercial low fat or no fat mozzarella cheese on the market. Low fat mozzarella cheeses with improved melting and textural characteristics could find an important market in the pizza industry and could improve the image of pizza.

The study concludes that the addition of fat replacers will enhance the moisture retention and functionality of mozzarella cheeses. An increase in moisture content and a decrease in pH are expected to increase meltability and decrease chewiness in low fat mozzarella cheeses. Capsular exopolysaccharide producing starter cultures is expected to increase moisture retention in mozzarella cheeses and improve their melting and textural characteristics.

Results have shown that it is possible to manufacture mozzarella cheeses with 5% fat with similar characteristics as full fat. This results in an almost 80% reduction in fat content. Use of slimes producing starter cultures can result in over 3% more moisture retention, giving improved functionality. Similarly, we have found that removing calcium from milk prior to cheese manufacturing helps improve cheese quality and functionality substantially. Use of starches and fat replacers has shown promising results.

The project has been funded by Dairy Farmers and an Australian Research Council’s Strategic Partnership with Industry for Research and Training (SPIRT) grant supported by Dairy Farmers, with external funding of $190,000.

Email contact details: Nagendra.Shah@vu.edu.au
Although, for some, being a medical practitioner in general practice is a hazard to wellbeing, not all practitioners succumb. Factors that promote resilience as well as vulnerability have been identified and developed as a conceptual model, as part of this research work. This research aims, firstly, to enhance this model by incorporating stratification factors. The wellbeing of general practitioners is being tracked, as both their wellbeing and stratification changes over time, from their initial vocational training to their establishment in practice and afterwards. The designs are prospective, longitudinal ones of selected cohorts who enter and leave general practice vocational training. Thus, wellbeing and factors related to it are being studied particularly in general practitioners in western Melbourne and adjacent rural areas.

This research has implications for workforce planning and the development of training curricula to attract and maintain wellness among general practitioners, especially those who opt to work in under-resourced primary care settings. This research is being conducted in collaboration with and support of local general practices, Central Highlands Division of General Practice and Royal Australian College of General Practitioners.

The research has been funded by an ARC Linkage APAI Grant, a Victoria University Seeding Grant, and a Department of Psychology Social Development Grant.

General practitioners have the responsibility of assessing, monitoring and treating patients who come to them in need. Patient need is particularly great in Western Melbourne and rural areas where the demographic profile is one of significantly lower physical and mental health compared with Australian norms. The high level of patient need requires the best possible medical care and to achieve this the wellbeing of general practitioners is paramount.

The best possible medical care can be compromised in areas where there are insufficient numbers of general practitioners. The uneven distribution of general practitioners is a rational problem. It is also a significant problem for the Western region of Melbourne and adjacent rural areas. The research work seeks to identify factors influencing the distribution of general practitioners in rural areas and in areas such as the Western Melbourne metropolitan area.

Rather than investigate market forces and free choice, which are regarded as relatively insignificant, the research work considers factors related to stratification, or to various social differences, which are present before, during and after training. Moreover, some effects of stratification, especially gender, class and ethnicity, are expected to accumulate (for example, if the GP is female) or some may resolve over time (if, for example, the GP is initially in debt). Another impact of stratification is on wellbeing, as research has shown these to be related.

Medical practitioners already suffer higher rates of mental, physical and psychosocial problems compared with the general population. Stratification factors related to risk identify young, early career practitioners, female practitioners and those who work outside community health services.

These at risk practitioners are likely to experience stresses and strains, which influence their distribution into practices, but it is not clearly understood how this is the case.

RESEARCH TEAM:
Dr Denise Charman, Michael Gruis, Amanda Meehan, PhD student, Kim Shearson, Honours student, Department of Psychology, Ian Watts, Royal Australian College of General Practitioners, with Dr Adrian Fisher, Anthy Kapsalakis, Romana Morda, Department of Psychology.
PERCENTAGE, RELATIONAL, AND COLLECTIVE WELLNESS

Wellness is achieved by the satisfaction of personal, interpersonal, and collective needs of community members. Personal needs include health, the ability to make independent decisions, and a sense of control. Interpersonal needs include positive family relations, affection, empathy, and social support. Collective needs include access to health care facilities, economic sufficiency, housing, and adequate transportation.

Victoria University launched in 2001 the Wellness Promotion Unit. Housed in the Department of Psychology, the Unit aims to promote wellness in individuals, organisations, and communities in Victoria in general, and in the Western and rural regions in particular. This is in line with the mission of Victoria University to offer education, research, and services to the communities in these areas.

The Unit collaborates with community stakeholders in defining their needs and devising appropriate research methods and interventions. Members of the Unit espouse a health promotion philosophy that seeks to improve the wellness of all community members. This is a unique development in trying to establish research and working relationships between academic bodies and community organizations. It is also unique in that the focus is on preventing problems, fostering resilience, and promoting well-being as opposed to treating problems after they occur. The various members of the Unit have worked in health and human services and understand their challenges. By specializing in action research, the Wellness team ensures that research is always followed by interventions that are meaningful to members of the community or organizations involved.

Over the past three decades the sexual abuse of children has been recognized as a significant problem facing society. Recognition by researchers, practitioners, and the general public, plus both the prevalence and effects of child sexual abuse, has resulted in substantial efforts to address the problem. The potential that education holds in the prevention of child sexual abuse has seen the introduction of many education-based prevention initiatives across the world. The present research investigated the efficacy of the Australian school-based Child Sexual Abuse Prevention Program (CSAPP). The CSAPP project aims to prevent the sexual abuse of children and young people by providing education and awareness programs to primary and secondary school students, teachers, and parents. The study sought to determine the efficacy of the CSAPP project in providing children and young people with the information and skills required to avoid potentially abusive situations, or if abuse has already occurred, to access help sooner.

The first CSAPP program was implemented with 100 students, their parents, and teachers at a Victorian secondary school in 1995. The results indicated that students who participated in the 6-week course performed significantly better on a range of knowledge and skill-based assessments than those who had not. Furthermore, most of these gains were maintained at two, six, and twelve month follow-up assessments. In fact, approximately 25% and 10% of students reported using the information or skills to avoid a potentially abusive situation at two and twelve month follow-ups respectively.

A second CSAPP program was implemented with 321 students, their parents, and teachers, in two Victorian primary schools in 1996 and 1997. The results indicated that primary school students who participated in CSAPP’s Staying Safe With People course performed significantly better on a range of knowledge and skill-based measures than participants who had not. Participation in the safety course did not have a significant impact on children’s anxiety.

Follow-up assessments undertaken at eight and twelve months revealed the students’ long-term retention of knowledge and skills, with a striking proportion of participants reporting continued use of the information or skills when faced with “unsafe” or “scary” situations.

In both the primary and secondary school programs, the adult education components were revealed to be valuable aspects of the overall program. The evaluation also identified other program strengths, such as the use of role-rehearsal in student programs and the importance of ongoing monitoring of such programs in the prevention of child sexual abuse. The research supervisor was Associate Professor Dot Bruck. Funding was obtained from numerous sources including the Australian Youth Foundation, the Myer Foundation, the Hecht Trust, the Victorian Health Promotion Foundation, and the Children’s Promise.

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Email contact details: Isaac.Prilleltensky@vu.edu.au
We all have a fairly clear idea of the value of undergraduate study as individuals. But how do university degrees contribute to the advancement of society as a whole? What goes on in the study of the humanities and social sciences? This is the problem presented to Robert Pascoe, the foundation Dean of Arts at Victoria University.

Professor Pascoe’s field is social history, so the first thing he did was to find several dozen individual Arts academics and teams of teachers who were recommended to him as exemplary practitioners. ‘I wanted to find out how they motivated their students, how they kept their content up-to-date, and how they managed their use of computers in the classroom if they are to engage girls and lower achieving students in mathematics learning.

The exemplary teachers were chosen to represent the full diversity of the Bachelor of Arts, across the range of social sciences and humanities that make up the degree, and to reflect both the older universities and the brand-new ones.

This qualitative research could not stand alone, however. It is the strategy used in Martha Nussbaum’s Cultivating Humanity (1997), a similar account of the teaching and learning that goes on in the Humanities in American colleges and universities, but it works best only with those readers who already have some understanding and commitment to the BA project.

That got him into the new area of ‘knowledge management’. In October 2001 he spent some time at the OECD in Paris, meeting the researchers in this field pushing the boundaries around the issue of how the humanities and social sciences contribute to the construction and circulation of knowledge in post-industrial societies. ‘Our report then became much more of a public policy document and much less of a social history of the work of Arts academics.’

The qualitative data from the interviews was triangulated with large amounts of quantitative data from many sources (including the OECD, the Australian Government, the Australian Vice-Chancellors’ Committee, and elsewhere). The resulting report is as compelling by the Australian University Teaching Committee, whose steering committee for this project was chaired by Professor Anne Edwards, Vice-Chancellor, Flinders University.

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TO BA OR NOT TO BA?

Computers: The Gender Divider in Mathematics Classrooms

Using computers in classrooms is a given in education. However, the research of Dr Vale for her PhD has shown that secondary mathematics teachers need to carefully plan and manage their use of computers in the classroom if they are to engage girls and lower achieving students in mathematics learning.

In mathematics, as for other subject areas, the most recent curriculum guidelines for schools require students to use a range of technologies in their learning. But how do computers affect the culture of the mathematics classroom? And, in particular, how do girls and boys view these learning environments and in relation to mathematics? These are important questions as gender equity in mathematics classrooms is more realisable than ever before.

Teachers need to be aware that their own views and practices may unwittingly support boys’ view of computers as a male domain. Teachers also need to be careful not to mistake boys’ enthusiasm for learning about computers for success in computer based mathematics. In the middle years of schooling an integrated curriculum is a sensible way of combining learning for mathematics and information technology. However, teachers need to make sure that the expectations for learning in both domains are made explicit, so that both girls and boys of different levels of achievement may experience success and develop positive views of computer based mathematics that will contribute to their on-going participation in mathematics.

Email contact details: Colleen.Vale@vu.edu.au
wetlands are especially susceptible to algal blooms because they often receive nutrient-rich waters in the form of stormwater or other runoff whenever it rains.

We studied Victoria Park Lake, Shepparton (central Victoria) over a 3 year period, to determine the impact of nutrient enrichment on the balance between aquatic vegetation and algal blooms. As the plants in urban lakes are often harvested mechanically, to create open spaces for water-based recreation, we also examined the effect of removing plants on the ecology of the lake. We found that the lake was resilient to chronic, low levels of nutrient enrichment on the balance between aquatic plants and algal blooms in a large urban lake. As the plants in urban lakes are often harvested mechanically, to create open spaces for water-based recreation, we also examined the effect of removing plants on the ecology of the lake. We found that the lake was resilient to chronic, low levels of nutrient enrichment, but the desirable aquatic plants were soon replaced by noxious algae if the nutrient loadings were too high. Harvesting the plants had marked effects of the ecology of the lake, but surprisingly did not result in an algal bloom.

The results of this project have been circulated widely to aquatic ecologists and managers of lakes and wetlands (e.g., councils etc), via community workshops and meetings, and the production of 2000 copies of two small (2-4 page) fact sheets. We are currently preparing a larger (8 page) fact sheet to explain further the management implications of the research project. This document will be circulated widely by the Commonwealth Government.

This project was funded under the National Wetlands Research and Development Program, a joint initiative of the Land and Water Resources Research and Development Corporation and Environment Australia. Funding totalling $327,000 supported the research component of the project under this program. An additional $55,000 was received in 2001-2002 from Land and Water Australia to provide for additional communication activities and development of adoption strategies.

The community perception of urban lakes and wetlands has undergone something of a change over the past 20 years. Once regarded as mere wastelands and sources of disease, to be filled in as rapidly as possible for “useful” purposes, urban lakes and wetlands are now recognised as valuable components of the landscape. One has only to look at the number of large billboards alongside new housing developments, extolling the presence of lake waterfronts and wetland vistas, to see the pivotal role that ornamental lakes and wetlands now play in the community consciousness.

The challenge that remains with incorporating lakes and wetlands into urban environments, is that we know very little on how to design them or manage them sustainably. Unless they are designed carefully and managed intelligently, these shallow water bodies can easily become unsightly cesspools, colonised by weeds, used as a repository for shopping trolleys and other junk, and characterised by recurrent algal blooms that limit their recreational uses. Conversely, if designed and managed correctly, urban lakes and wetlands can be delightful environments, offering beautiful views to residents from their houses, convenient opportunities for passive recreation, and acting as local islands of biodiversity in an otherwise ecologically impoverished location.

The research and development project that we led aimed to determine the best ways to manage the aquatic vegetation of shallow urban lakes and wetlands. It is often management of the aquatic vegetation that presents the greatest difficulty for lake managers: too much and the residents complain of the “weeds” in the lake; too little and there is no habitat provided for native fish or waterbirds. Moreover, it now seems that the best way to combat algal blooms in urban lakes is to ensure that they have dense, healthy beds of submerged aquatic plants. Urban lakes and wetlands are especially susceptible to algal blooms because they often receive nutrient-rich waters in the form of stormwater or other runoff whenever it rains.

We studied Victoria Park Lake, Shepparton (central Victoria) over a 3 year period, to determine the impact of nutrient enrichment on the balance between aquatic plants and algal blooms in a large urban lake. As the plants in urban lakes are often harvested mechanically, to create open spaces for water-based recreation, we also examined the effect of removing plants on the ecology of the lake. We found that the lake was resilient to chronic, low levels of nutrient enrichment, but the desirable aquatic plants were soon replaced by noxious algae if the nutrient loadings were too high. Harvesting the plants had marked effects of the ecology of the lake, but surprisingly did not result in an algal bloom.

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Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Felicetti Pty Ltd

Development of topological optimisation techniques for the conceptual design of multi-storey buildings

Faculty of Engineering and Science
Associate Professor Yi-Min Xie,

Family Services
Europe/Australia Institute
Racial classifications in transnational context: Aborigines and Islanders in Australia, Native Americans, African Americans and Afro-Brazilians

Dr Patrick Wolfe,
Director, Centre for Rehabilitation, Exercise and Sport Science, Faculty of Human Development
Research in the fields of Paediatric Exercise Science and Applied Sport and Work Physiology

Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Glastonbury Child and Family Services

Funding: $65,000 over 2 years
Funds Source: ARC – Discovery

Reducing fire deaths - a new approach to smoke alarms

Dr Reina Michaelson, Winner of the Vice-Chancellor’s Medal, Faculty of Arts
Supervisor: Associate Professor Dorothy Brock, the Department of Psychology in the Faculty of Arts

Professor Ronayne and Professor Beck congratulate Professor Isaac Prilleltensky and Dr Reina Michaelson on receiving the Vice-Chancellor’s Medals for Excellence in Research.

CITATIONS

1. CATEGORY FOR RESEARCH STAFF:

Professor Isaac Prilleltensky, Winner of the Vice-Chancellor’s Medal, Director, Wellness Promotion Unit, Faculty of Arts
Research in the area of promotion of personal, community and societal wellness

Professor Michael Polonsky, Faculty of Business and Law
Research covers environmental marketing/management, stakeholder theory and marketing, social ethical issues within marketing and cross-cultural/comparative research.

Professor John Carlsson, Director, Centre for Rehabilitation, Exercise and Sport Science, Faculty of Human Development
Research is in the fields of Paediatric Exercise Science and Applied Sport and Work Physiology

Professor Sever Dragomir, Faculty of Engineering and Science
Research is in the area of mathematical inequalities that have a large potential for applications

2. CATEGORY FOR RESEARCH DEGREE GRADUATE CATEGORY:

Dr Reina Michaelson, Winner of the Postgraduate Research Degree Medal and Citation Awardee for the Faculty of Arts

Dr Scott Young, Faculty of Engineering and Science
Supervisors: Professor Vaughan Beck and Dr Paul Clancy (CESARE)
Thesis title: “Structural Modelling of Plasterboard-clad, Light Timber-Framed Walls in Fire”

Ms Sandra Iuliano Burns, Faculty of Human Development
Supervisor: Professor John Carlsson, through the School of Human Movement, Recreation and Performance in the Faculty of Human Development.
Thesis title: “Bone Growth during Puberty and the Effects of Exercise and Calcium on Bone Mass Accrual”

GRANTS LISTING

Associate Professor Yi-Min Xie, Faculty of Engineering and Science
Efficient and robust bi-directional evolutionary structural optimisation method for large-scale three-dimensional topological design
Funding: $165,000 over 3 years
Funds Source: ARC – Discovery

Dr Patrick Wolfe, Europe/Australia Institute
Racial classifications in transnational context: Aborigines and Islanders in Australia, Native Americans, African Americans and Afro-Brazilians
Funding: $65,000 over 2 years
Funds Source: ARC – Discovery

Professor Ronald Francis and Associate Professor Anna Armstrong, Faculty of Business and Law
Evaluating the community governance of crime prevention and community safety
Funding: $261,000 over 3 years
Funds Source: ARC – Linkage Project
Industry Partner: Victorian Department of Justice

Professor Peter Sheehan, Dr Sardar Islam, Centre for Strategic Economic Studies and Professor John Phililmore, Murdoch University
Climate change, industrial structure and the knowledge economy: Key issues for an effective response on greenhouse gases
Funding: $294,000 over 3 years
Funds Source: ARC – Linkage Project
Industry Partners: Australian Greenhouse Office, Business Council of Australia, Department of Industry, Science and Resources

Dr Iima O’Brien, Faculty of Human Development
Aliens and others: Representing citizenship and interments in Australia during WW2
Funding: $179,001 over 3 years
Funds Source: ARC – Linkage Project
Industry Partners: National Archives of Australia, National Museum of Australia, Australian Multicultural Foundation

Ms Marion Kostanski, Faculty of Arts
Coping in the face of life adversity. A model of resilience for stroke survivors
Funding: $64,290 over 2 years
Funds Source: ARC – Linkage APAI
Industry Partners: Pfizer Pty Ltd, National Stroke Foundation

Associate Professor Dorothy Brock, Faculty of Arts
Reducing fire deaths - a new approach to smoke alarms
Funding: $101,741 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: OneSteel Manufacturing Pty Ltd

Associate Professor Suzanne Dean and Dr Cynthia Leung, Faculty of Arts
Challenging disadvantage: The social outcomes of an early educational intervention with the family
Funding: $261,000 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Business Council of Australia

Associate Professor Yi-Min Xie, Faculty of Engineering and Science
Development of topological optimisation techniques for the conceptual design of multi-storey buildings
Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Felicetti Pty Ltd
Dr Audrey Tam, Faculty of Engineering and Science
Structured natural language descriptions for semantic content retrieval of visual data
Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Lonely Planet Publications

Dr Margaret Deery, Associate Professor Leo Jago and Professor Brian King, Faculty of Business and Law
Managing the volunteer workforce: flexible structures and strategies to integrate volunteers and paid workers
Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partners: Melbourne Museum, National Museum of Australia

Professor Isaac Prilleltensky, Faculty of Arts
Promoting well-being in culturally and linguistically diverse groups: Towards evidence-based practice
Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partner: Good Shepherd Youth and Family Service Inc

Dr Denise Charman, Dr Adrian Fisher and Professor Isaac Prilleltensky, Faculty of Arts
Research and action in medical practitioner wellbeing: Testing a conceptual model
Funding: $82,635 over 3 years
Funds Source: ARC – Linkage APAI
Industry Partners: Royal Australian College of General Practitioners, Central Highlands Division of General Practice

Dr Marc Askew, Faculty of Arts
UNESCO – agency of cultural globalization? Analysis of the conflict between universal values and local cultural identity in the Asia-Pacific region
Funding: $375,126 over 4 years
Funds Source: ARC – Discovery Grant (Shared – Deakin University as lead institution)

Professor Jim Falk, Deputy Vice-Chancellor [Higher Education]
Governance in a shrinking, fragmenting world
Funding: $90,000 over 3 years
Funds Source: ARC Discovery Grant (Shared – La Trobe University as lead institution)

Professor Elaine Martin, Postgraduate Research Unit
Relations between academics’ understanding of their subject matter and their experiences of research and teaching
Funding: $120,000 over 3 years
Funds Source: ARC Discovery Grant (Shared – The University of Sydney as lead institution)

Professor John Sinclair, Faculty of Arts
Television, globalisation and social change in India
Funding: $246,327 over 3 years
Funds Source: ARC Discovery Grant
(Shared – Deakin University as lead institution)

Associate Professor Yi-Min Xie, Faculty of Engineering and Science
Designing for safe and durable structures
Funding: $110,000 over 3 years
Funds Source: ARC Discovery
(Shared – Monash University as lead institution)

Dr Delwyn Goodrick, Faculty of Arts
Evaluation skills development and support for the breast services enhancement program
Funding: $81,374 over 1 year
Funds Source: Department of Human Services

Professor John Houghton, Centre for Strategic Economic Studies
Information industries and technology trade update
Funding: $57,727 over 2 years
Funds Source: Australia Computer Society

Mr Jim Lang, Centre for Strategic Economic Studies
SME export market opportunities
Funding: $38,956 over 1 year
Funds Source: Commonwealth Department of Employment, Workplace Relations and Small Business

Dr Greg Martin, Faculty of Engineering and Science
Radio wave penetration of vehicle bodies with application to automobile passive entry systems
Funding: $107,800 over 2 years
Funds Source: Robert Bosch (Australia) Pty Ltd

Ms Carolyn Ovens, Faculty of Human Development
Adult literacy national project
Funding: $165,540 over 1 year
Funds Source: Australian National Training Authority

Professor Isaac Prilleltensky, Faculty of Arts
Promoting positive school engagement – creating life opportunities and choices
Funding: $89,182 over 3 years
Funds Source: Berry Street Victoria

Ms Christine Riddell, Faculty of Human Development
Adult literacy national project
Funding: $66,000 over 1 year
Funds Source: Australian National Training Authority (ANTA)

Dr James Doughney, Faculty of Business and Law
Needs of working electrical contractors: Self employed and small scale employers
Funding: $20,000 over 1 year
Funds Source: Electrical Trades Union of Australia

Ms Susuan Feldman, Faculty of Human Development
Colac intergenerational project (CIP)
Funding: $46,000 over 1 year
Funds Source: Department of Human Services

Professor Terence Seedman, Faculty of Human Development
A research study into the welfare of retired jockeys
Funding: $35,210 over 1 year
Funds Source: Department of State and Regional Development

Associate Professor Michael Sek, Faculty of Engineering and Science
Hydrogen assisted combustion research project - Stage 2
Funding: $250,209 over 1 year
Funds Source: HAC Technologies

Professor Peter Sheehan, Centre for Strategic Economic Studies
Pharmaceutical policy in Australia
Funding: $300,000 over 1 year
Funds Source: Merck Sharp and Dohme

Labour market inequality and the changing nature of US jobs
Funding: $32,600 over 1 year
Funds Source: Russell Sage Foundation

Valuation of KE projects
Funding: $40,000 over 1 year
Funds Source: Department of State and Regional Development

Dr Jack Singh, Faculty of Engineering and Science
National networked tele-test facility for integrated systems
Funding: $4.75 million over 2 years
Funds Source: Major National Research Facilities Program

Professor Ian Thomas, Faculty of Engineering and Science
Large scale experimental building-fire facility
Funding: $2,000,000 over 2 years
Funds Source: Department of Education, Employment & Training, Systemic Infrastructure Initiative
Industry Partners: Scientific Services Laboratory, AGAL, Country Fire Authority, BHP Billiton Ltd

National Museum of Australia
The University focuses its research activities, and strives for research excellence, in a number of areas where the University’s research strengths match the needs and interests of existing and potential external stakeholders. These areas, defined as strategic research areas, have been further refined to represent those programs associated with current University Research Centres, Faculty Centres, Key Research Areas (KRAs) and other major collaborations with Cooperative Research Centres (CRCs) and the Austin Research Institute.

Research contacts in the Strategic Research Areas are:

KRA – INTEGRATED FOOD VALUE CHAIN
Contact Person: Professor John Cary
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KRA – SOCIAL DIVERSITY AND COMMUNITY WELLBEING
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Europe Australia Institute
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Asia Australia Pacific Institute
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Institute for Youth, Education and Community
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Workplace Studies Centre (WSC)
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Wellness Promotion Unit
Director: Professor Isaac Prilleltensky
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