



MELBOURNE SUSTAINABLE
SOCIETY INSTITUTE

2012 | ANNUAL
REPORT



Credits

Enquiries about reprinting information contained
in this publication should be made through:

Melbourne Sustainable Society Institute

The University of Melbourne

Victoria 3010

t: +61 3 8344 3099

f: +61 3 9349 4218

Editors: Phoebe Bond and Craig Prebble

Design: Clearlight Creative, 0418 348 038, www.clearlightcreative.com.au

Views expressed are not necessarily endorsed or approved by the University.

The information in this publication was correct at time of printing.

The University reserves the right to make changes as appropriate.

For more information visit:

www.sustainable.unimelb.edu.au

See also our climate change research website:

www.climatechange.unimelb.edu.au



Contents

Background _____	4
Message from the Director _____	5
MSSI Executive _____	6–7
MSSI themes _____	8–10
MSSI Associates _____	11
Melbourne Academy for Sustainability and Society (MASS) _____	11
Research platform _____	12–13
Research facilitation _____	14–15
Seed Funding Projects _____	16–17
Review and strategic directions _____	18
MSSI Visiting Fellows _____	19
2012 events _____	20
2020 book and other publications _____	21
Financial statement _____	22



Background

The Melbourne Sustainable Society Institute (MSSI) is an inter-disciplinary research institute at the University of Melbourne. We aim to progress sustainability as a societal goal, in Australia and the Asia-Pacific region. Our mission is to progress sustainability by being an information portal to sustainability-related research at the University, and a platform upon which researchers and communities can work together to make a difference (see diagram). To achieve this, we gather information on sustainability research under six themes:

- People and Values
- Climate Change
- Health Equity
- Water, Food & Energy
- Urban Futures
- Biodiversity and Conservation

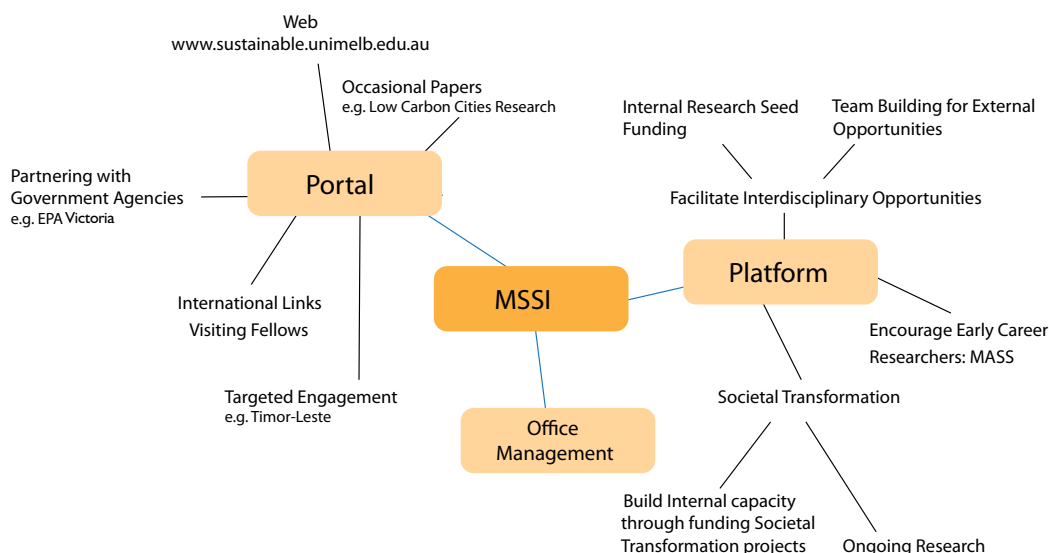
MSSI is led by a small staff and advised by an Executive which brings together 14 researchers from across the University's 11 faculties. Additionally MSSI has a small group of Associates, leaders from within and outside the

University, and a group of PhD students who are selected competitively each year to share ideas and research.

Our values include:

- Facilitating: bringing people together for research to progress sustainability as a societal goal.
- Transforming: proactively developing our vision and proposals and responding to opportunities to create a sustainable society.
- Transcending: working across traditional intellectual and organisational boundaries, working strategically with other research providers, companies, NGOs and government.
- Value-adding: working with other institutions, within and outside the University, to ensure we add value.

The Institute's approach to facilitating sustainable solutions is distinctive in four respects: we believe people and values are central to creating integrated sustainable solutions; we encourage engagement with community, industry, policy makers and research providers to generate best-possible outcomes; we emphasise a solutions-focus when contributing to transformation; and we are regionally committed to Victoria, Australia and the Asia-Pacific region.





MSSI Staff: Hannah Loney, Taegen Edwards, Craig Prebble, Carolyn Ingvarson, Tania Struzina, Craig Pearson and Phoebe Bond.

Message from the Director

There are welcome signs that societal change is gathering momentum. Car ownership per head of population has peaked; public transport numbers are skyrocketing; Australia has introduced a carbon tax; internationally, cities and countries are implementing ambitious plans to move to renewable resources, close consumption cycles and mitigate and adapt to climate change. Global investment in renewable energy production in 2012 was five times that into fossil fuels.

Locally, the University of Melbourne opened a modest Campus Sustainability Centre, a demonstration of direct geothermal energy for heating and cooling, and has banned the sale of bottled water. Sustainability became the centrepiece of a major initiative, Carlton Connect, and it was identified as one of three 'Grand Challenges' in the University's research plan.

However, the year has not been all progress. Natural disasters, particularly floods, have seen unprecedented tax expenditure on replacement of infrastructure and community relief. Disappointingly, we are still in the mindset of replacing vulnerable assets, not building for resilience and anticipating future disasters. MSSI has not successfully facilitated a large research grant this year, an outcome partially related to disaster responses and government fiscal preoccupation. This contrasts with 2009–11 when we helped win substantial funds for research to support sustainable living.

Nonetheless, 2012 has been extremely satisfying. Highlights include:

- Funding and mentoring university-wide research projects into societal transformation and helping seed-fund research ideas for sustainability.
- Publication of a book, *2020 Vision for a Sustainable Society* written by MSSI staff, Executives and Associates, which has been distributed to all Victorian senior high schools and which is available in hard copy or as a PDF from the MSSI website.
- Partnership with the Victorian Environmental Protection Authority, launched in November, in which the University of Melbourne leads two of EPA's five business research priorities.
- Ongoing collaboration with agencies such as DPI and Victorian local governments, resulting in co-investment in strategic research to meet both our needs.
- Hosting three International Fellows, nine public lectures and workshops by visitors from Holland, Belgium, Germany, the USA and Sweden, two executive workshops attended by government, non-government agencies and other universities, and a total of 37 events in 2012.
- A favourable assessment from our mid-term Review Panel.

In conclusion, I am particularly proud that MSSI has taken the opportunity to mentor higher degree research students, both formally as members of MASS and informally, and early career researchers through advice and engagement as members of our Executive or invited participants in workshops. Our activities and successes – measured both by engaging hearts and minds and by obtaining research grants – are due, with thanks, to our terrific team, our close colleagues Professor John Wiseman, Taegen Edwards and Lauren Rickards, our Executive and Associates.

Craig Pearson



MSSI Executive

Professor Craig Pearson

Foundation Director MSSI (*ex officio* member)
and *Theme Leader for Water, Food and Energy*

Research management; city sustainability; food
and urban greenbelts and agricultural policy.

Associate Professor Grant Blashki

Theme Leader for Health Equity
Nossal Institute for Global Health;
Faculty of Medicine, Dentistry & Health Sciences

Climate change and health; mental health;
primary health care.

Dr Dianne Chambers

Melbourne Graduate School of Education
Processes to embed Education for Sustainability (EfS)
in university curricula; EfS in teacher education;
pedagogies to support EfS.

Associate Professor Colin Duffield

Leader for Partnerships Development;
Department of Infrastructure Engineering;
Melbourne School of Engineering
Policies and processes for infrastructure investment
and procurement.

Associate Professor Richard Eckard (from July 2012)

Theme Leader for Climate Change
Director, Primary Industries Climate Challenges Centre;
Melbourne School of Land & Environment

Mitigation of greenhouse gas emissions from livestock
production, whole farm systems analysis of climate
change adaptation and mitigation.

Professor Robyn Eckersley

School of Social and Political Sciences;
Faculty of Arts

Environmental political theory and
politics; international climate change negotiations.

Professor Brendan Gleeson (from October 2012)

Theme Leader for Urban Futures
Faculty of Architecture, Building and Planning

Urbanisation and sustainability, climate change
and cities, urban governance and social policy.

Associate Professor Ray Green (until July 2012)

Faculty of Architecture, Building and Planning
Climate change in coastal settlements; community
participation in environmental design.

Professor Ary Hoffmann

Theme Leader for Biodiversity and Conservation
Department of Genetics & Department of Zoology;
Faculty of Science

Australia's biodiversity, particularly in the context
of adaptation to climate change.

Professor David Karoly (until July 2012)

School of Earth Sciences; Faculty of Science
Climate variability and change, global warming,
ozone depletion, climate dynamics.

Dr Michael Kearney

Department of Zoology; Faculty of Science
Climate impacts on the distribution and abundance
of animals; laboratory and field investigations of
ecophysiology and behaviour.

Professor Yoshihisa Kashima

Melbourne School of Psychological Sciences;
Faculty of Medicine, Dentistry & Health Sciences
Social psychology of cultural dynamics; social cognition
and motivation for transformation.



New Campus Sustainability Centre opened in April 2012.

Dr Alan March

Melbourne School of Design;
Faculty of Architecture, Building & Planning

Planning theory, planning law and urban design;
planning as democracy; risk, regulations and
professionalism in urban planning.

Associate Professor Ruth Nettle

Department of Agriculture and Food Systems;
Melbourne School of Land and Environment

Rural workforce development; the role of extension
in rural change; farming systems change; human and
social capacity.

Associate Professor Angela Paladino

Theme Leader for People and Values
Department of Management and Marketing;
Faculty of Business and Economics

Environmental consumer marketing, innovation
and performance outcomes, resource based/capabilities
strategies and markets.

Craig Prebble

Executive Officer, MSSI

Professor Peter Scales

Department of Chemical & Biomolecular
Engineering; Melbourne School of Engineering

Environmental engineering; water purification, waste
water processing and recycling, sustainable technologies.

Dr Audrey Yue

School of Culture and Communication; Faculty of Arts

Multiculturalism, cultural policy, Asian diaspora media,
queer theory, spatial aesthetics and the transnational
public sphere.





Mike Hill

MSSI Associate and co-director of WestWyck, Mike works in eco-housing development. He is also chair of ECO-Buy, which helps businesses achieve sustainable procurement.

MSSI themes

In mid-2012, MSSI and the Carlton Connect Initiative aligned theme leaders to avoid confusion and ensure consistency between these programs. MSSI renamed its theme 'Cities and Towns', to match the Carlton Connect theme, 'Urban Futures'.

Colin Duffield, David Karoly and Richard Roush have acted as Directors of MSSI during Craig Pearson's absences this year. We are most grateful.

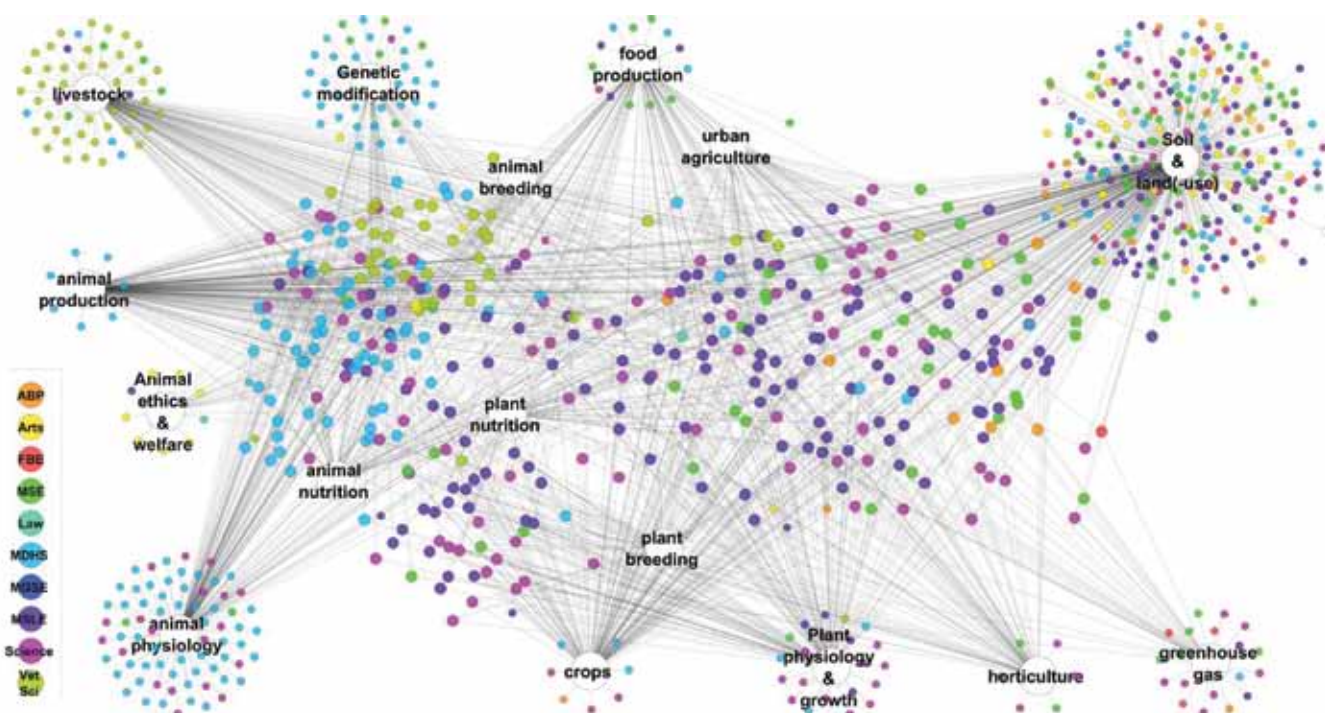
Water, Food and Energy

Theme Leader: Craig Pearson

This theme holds to the idea that water, food and energy form a nexus and need to be addressed together with respect to supply and security. Water research is divided into the topics Rural and Urban Water Cycle; and Water Policy, Law, Governance and Culture.

The food space is covered by Resilient Food Production and Environmental Impacts; and Food and Nutrition. Energy sources and technologies are handled by the Melbourne Energy Institute.

A *Food Waste Workshop* addressed waste in the foodchain and what innovations might be possible. The key aspects of retention, rescue, recovery and behaviour were presented by experts and then offered for discussion. The workshop was attended by academics from three states, government policymakers, NGOs and private sector leaders. In October, the University granted \$1.5m funding (\$500k p.a. for three years) for MSLE to act as the lead in the development of the area of Food and Nutrition. MSSI has provided initial support through identifying possible research foci and researchers in these topics. The Theme Leader for Water, Food and Energy in 2013 will be Peter Scales.





Katrin Hug

Katrin is a MASS member with a passion for understanding and remediating arsenic toxicity in drinking water in order to protect health.

People and Values

Theme Leader: Angela Paladino

People and Values are the linchpin of sustainability research. It is only by understanding the changing nature of human behaviour that innovative solutions to society's challenges can be implemented. The topics of this theme are: Changing Population; Attitudes, Communication and Transformation; and Law, Justice and Ethics.

The focus this year was on engaging with stakeholders and experts on societal transformation. Some clear synergies developed. The top-down analysis of the Post Carbon Pathways project met with the bottom-up research of *Transforming society for a resilient, low carbon future*. The role of culture in a community is foregrounded in the Cultural Pathways to Sustainability project. And individual and organisational behaviour interlock in the work of *Rubbish to resource: transforming perceptions and systems at the University of Melbourne*, as well as *Acting on Attitudes* seeking to change recycling behaviours.

With the introduction of the Melbourne Social Equity Institute (MSEI), new opportunities emerge for interdisciplinary collaborations, particularly where themes overlap. We look forward to these opportunities.

Climate Change

Theme Leaders: David Karoly (until June 2012); Richard Eckard (current)

The wide-ranging impacts of climate change will increasingly affect all other sustainability themes. MSSl organises this research into three topics: Climate Science and Impacts; Vulnerability and Adaptation to Climate Change; and Mitigation of Climate Change.

The University of Melbourne Climate Change Group has members from many different areas across the

University. It provides an opportunity for the exchange of information and the fostering of collaboration through regular meetings. In March, representatives from the group organised a briefing to parliamentarians in Canberra, explaining the outcomes of the *Four Degrees or More?* conference held in 2011. A public forum and symposium, *Climate Change: Science, Impacts and Adaptation in Victoria* held in September 2012, involved many of the University's researchers and was supported by the Royal Society of Victoria, the ARC Centre of Excellence for Climate System Science, VCCCAR and the Bureau of Meteorology. MSSl also ran a short film competition, *GreenScreen: Climate Fix Flicks*, designed to present positive messages about climate change solutions.

Health Equity

Theme Leader: Grant Blashki

The aim of the Health Equity theme is to promote sustainable, healthy, fairer societies. It focuses on three interdisciplinary areas for which there are clear co-benefits for both community wellbeing and the environment: Health Promotion; Disease Prevention; and Health Services.

This year, the Health and Sustainability Journal Club continued to meet monthly. This group strives to integrate the health sector with the research community by addressing complex, interconnected problems. On the back of the successful conference in 2011, MSSl staged *Creating Healthy Sustainable Societies II* in November 2012. It consisted of a dynamic mix of keynote presentations, panel discussions, and a series of short project updates. It was a chance to profile research, build networks and discuss future collaboration. It was attended by a wide range of allied professionals including students, researchers, advocates and leaders. The Theme Leader for Health Equity in 2013 will be John Fitzgerald.



Sophie Guy

A MASS member, Sophie is interested in whether analogy might be a useful tool for improving conceptual understanding of climate change issues.

MSSI themes cont...

Urban Futures

Theme Leaders: Alan March (until September 2012); Brendan Gleeson (current)

The Urban Futures theme explores the needs of people for their places, dwellings and transport, while imagining sustainable human settlements that don't undermine their own futures. Using interdisciplinary approaches, research done under this umbrella highlights the imperative for accurate modelling, sound planning, sober governance and ongoing monitoring of urban development projects. Its topics are: Liveable and Affordable; Built Structures; and Transport and Infrastructure.

This year, a seminar series on Sustainable Planning was held. Jane Monk, Director of State Planning Services, spoke on the *Challenge for a planning vision that engages communities*. Dr Elizabeth Taylor, a McKenzie Fellow, presented *Understanding 'Not In My Back Yard' in sustainability terms*. Distinguished planning theorist Professor Louis Albrechts of the Katholieke Universiteit Leuven spoke on *The importance of strategic planning for achievement of sustainable growth*. PhD Workshops entitled *Beyond the PhD* and *Operationalising your PhD* were also held.

Biodiversity and Conservation

Theme Leader: Ary Hoffmann

This theme explores our understanding of how environmental change (particularly climate change but also population pressures) is likely to affect our biodiversity assets, and how best to manage these impacts and engage the wider community to preserve environments by conservation measures. It encompasses three topics: Ecosystem Processes and Services; Pests and Invasive Species; and Threatened Species and Habitats.

Two workshops were run by the Predictive Ecology Group that forms the nucleus of this MSSI theme. The *Species distribution modelling workshop* offered a rich and integrative experience for graduate students from a number of universities. A special workshop was devised around the Dynamic Energy Budget theory of visiting professor Bas Kooijman. This offered students, early-career and seasoned academics alike an educative experience from a challenging biological theorist.





Prof Ruth Fincher

Ruth Fincher was interim director of MSSI from its inception in 2008. An urban geographer, her experience of interdisciplinary research was invaluable in setting up the Institute.

MSSI Associates

MSSI benefits from the interest and involvement of leading academics, senior bureaucrats, and innovative business people. We formally recognise a small number of these people who are striving for a more sustainable society as our Associates.

Kate Auty, Commissioner for Environmental Sustainability, Victoria. **Jon Barnett**, Resource Management and Geography, University of Melbourne. **John Brumby**, Vice-Chancellor's Professorial Fellow, University of Melbourne. **Peter Christoff**, Environmental Studies, Geography, University of Melbourne. **Monique Conheady**, Business Partner Marketing, Hertz; Chair at Moreland Energy Foundation. **Peter Doherty**, Laureate Professor, Microbiology and Immunology, University of Melbourne. **Colin Ferguson**, Accounting, University of Melbourne. **Ruth Fincher**, Geography, University of Melbourne. **Rebecca Ford**, Agriculture and Food Systems, University of Melbourne. **Ross Garnaut**, Vice-Chancellor's Fellow, University of Melbourne; Professorial Fellow, Economics. **Lee Godden**, Law, University of Melbourne. **Ray Green**, Architecture, Building and Planning, University of Melbourne. **Mike Hill**, co-Director, WestWyck & Deputy Chair, Sustainability Victoria.

David Karoly, School of Earth Sciences, University of Melbourne. **Rodney Keenan**, Victorian Centre for Climate Change Adaptation Research. **Rebecca Kippen**, Melbourne School of Population Health, University of Melbourne. **Tom Kvan**, Dean, Architecture, Building and Planning; University of Melbourne. **Liza Maimone**, Partner, Consulting Markets Leader PwC Australia. **Hector Malano**, Infrastructure Engineering, University of Melbourne. **Mark McDonnell**, Australian Research Centre for Urban Ecology; Botany, University of Melbourne. **Chris Ryan**, Victorian Eco-Innovation Lab, University of Melbourne. **Pru Sanderson**, Global Business Leader – City Development, GHD. **Helen Sykes**, Founder, Future Leaders. **Tim van Gelder**, Principal, Austhink Consulting. **Marcus Wigan**, Emeritus Professor, Edinburgh Napier University; Principal, Oxford Systematics. **John Wiseman**, Melbourne Sustainable Society Institute, University of Melbourne.

Melbourne Academy for Sustainability and Society (MASS)

In 2010 MSSI created MASS, a group of 18 PhD students selected competitively from across the University, who meet fortnightly from March to November. Subsequent cohorts of 14 were selected in 2011 and 2012. Each group devises and completes an interdisciplinary research project. MASS aims to raise awareness of sustainability and foster interdisciplinary skills and teamwork. MSSI received nearly 40 applications from across eight faculties for the 2012 MASS group.

The MASS 1 project focused on understanding sustainability in Victorian enterprises. It was mentored by Jon Barnett and Craig Pearson. The outcome of

this project is a collaboratively written academic paper, submitted in December 2012.

The MASS 2 project researched sustainability and local government, and was mentored in 2012 by Craig Pearson and Colin Duffield. They aim to produce a research paper on indicators of sustainability that are used by local governments, and the extent to which these are constrained by Council finances.

MASS 3 began meetings in August 2012, mentored by Marcus Wigan and Craig Pearson. They have yet to select their project which will be mentored by Marcus Wigan and Yoshi Kashima.



Robert Huva

MASS member Robert is investigating co-variances in the weather and the influence on large scale renewable energy systems, such as wind and solar.

Research platform

In-House Projects

MSSI hosts a small number of strategic research projects, led by our Director or academic staff.

Land Use Plan – Forestry and Agriculture

The Zero Carbon Australia Land Use Plan has developed continental scenarios of land use which will store atmospheric carbon while providing a comprehensive assessment of how Australia can manage its productive capacity, ecological heritage and ecosystems services for the future. The project has been made possible through a generous donation facilitated by Beyond Zero Emissions and the Melbourne Energy Institute, with additional funding from MSSI. The research team consists of Chris Taylor, Adrian Whitehead and Andrew Longmire.

Indicators of Sustainability for Local Government

Chris Ives collaborated with Wyndham City Council to produce the 'Sustainability Scorecard: A tool to help local governments set targets and assess progress towards more sustainable futures' (see Publications). This was followed by a survey of 30 Victorian local governments to better understand perceptions of sustainability and to determine the most desirable or valuable sustainability indicators. Follow up interviews were conducted by Taegen Edwards and Carolyn Ingvarson. The responses are of interest to anyone concerned with improving the understanding and widespread use of sustainability indicators.

Societal Transformation Program

MSSI is helping build research capacity in Societal Transformation: the transformation to an affordable economy that emits zero carbon, is less consumptive, more equitable, and which provides personal fulfilment and reasonable health. In November 2011 we put out a call for applications, received 24, and selected eight for funding totalling \$325,804. These projects are described below:

Post Carbon Pathways: Overcoming barriers to the rapid implementation of post carbon economy transition plans and strategies

Chief Investigator: John Wiseman, MSSI

This project aims to strengthen understanding of actions needed to create rapid, large-scale transitions to a just and sustainable post carbon future. The first report launched in March 2012 analyses 18 post carbon economy transition strategies. The project then focused on overcoming barriers to implementation, conducting interviews with key thinkers on transition theory and practice.

Patient views on GP promotion of the public health benefits of sustainability during clinical consultations – Sustainability Script Project

Chief Investigator: Grant Blashki, Nossal Institute for Global Health

This project looks at the views of general practice patients to their GP promoting sustainable lifestyle actions that benefit their health. The project has surveyed 500 patients at GP clinics on the connection between sustainable living and their health.



Grant Blashki talks to a patient about the Sustainability Script.



Photograph by Chris Taylor

Regional Transformation: Sustainability Pathway Index

**Chief Investigator: Leonie Pearson,
Resource Management and Geography**

A Sustainability Pathway Index has been developed following an extensive review of theoretical frameworks and tests in two Australian regions. The framework shows systems capacity and pathways for achieving a sustainable future and is undergoing further case-testing.

Sustainability as an object of desire

**Chief Investigator: Justyna Karakiewicz,
Melbourne School of Design**

This study seeks to identify factors that motivate people to aspire towards sustainable living and the role of communications in persuading people of the benefits. It has developed an advertising campaign to promote the modification of behaviours and culture. This will be followed by a study to monitor the effects of the campaign, in terms of attitudinal and behavioural shifts.

Transforming society for a resilient, low carbon future: An analysis of transformative models from below

**Chief Investigator: Chris Ryan,
Victorian Eco-Innovation Lab**

This investigation analysed five models for transformative change in pursuit of a resilient, low-carbon future to determine impacts, strengths and weaknesses, and whether they can be upscaled or replicated. It then critically evaluates and compares the VEIL 'Eco Acupuncture' model to other models to determine its strengths, future direction and funding opportunities.

Cultural Pathways to Sustainability

**Chief Investigator: Audrey Yue,
Culture and Communication**

This research conducted literature reviews and analysis of ecological citizenship, an ethics of transformation, and arts and capacity building. A second review will collate art programs which speak directly to ecological sustainability issues. Stakeholder interviews have also been conducted to determine current thinking around encouraging sustainable behaviour in the City of Whittlesea and amongst those involved in cultural programs.

Rubbish to Resource: Transforming perceptions and systems at the University of Melbourne

**Chief Investigator: Judith Alcorn,
Property and Campus Services**

This waste and recycling project identifies the importance of providing infrastructure to make recycling easier. The team has assessed recycling rates across several university buildings and how this relates to bin placement and departmental culture. Interviews with cleaning staff about their practices are also being conducted.

Health Implications of Transition to a Zero-Carbon Economy

**Chief Investigator: Jeremy Moss,
Social Justice Initiative**

This study reviews literature on the health impacts of electricity sources, whether from extraction, infrastructure or generation. Health effects include immediate and accumulated harms of both renewable and non-renewable sources. As these health burdens are distributed unequally across communities, the team is surveying groups about likely impacts. The project involves the Melbourne Energy Institute and Beyond Zero Emissions.



Samaneh Shokravi

A member of MASS, Sam proposes a model to analyse industrial processes in terms of operation and maintenance from an environmental hazard point of view.

Research facilitation

MSSI facilitates research in the sustainability space by developing project teams, consolidating activities, providing guidance, and assisting with applications for external funding.

Environmental Protection Authority Partnership

The University of Melbourne, Monash University and RMIT University continue their strategic partnership with the EPA. This knowledge-driven collaboration gives EPA and University staff and students better access to expertise and wider networks as well as greater learning, development and research opportunities. This year the EPA has determined six priority business needs for research: waste management, water, environmental equity, fingerprinting of pollution hotspots, contaminated land and behaviour change in business. MSSI assisted EPA in arranging a research workshop and the official launch of the partnership in November 2012.

MUtopia

MUtopia is a multi-disciplinary design tool incorporating an integrated visualisation and a simulation platform. It displays in 3D the appearance of an urban development at the precinct level and quantifies the performance of key sustainability metrics at different scales. MSSI continued to facilitate this project in 2012 and is funding a supplementary stipend for a graduate student. Based at the Melbourne School of Engineering the MUtopia team formed a strong base for our successful bid for a CRC in Low Carbon Living, which commenced in 2012.

North West Metropolitan Region of Melbourne data access, integration and interrogation and demonstrator projects

MSSI facilitated and conducted a workshop that led to a joint venture between the Australian National Data Service (ANDS) and the Australian Urban Research Infrastructure Network (AURIN). The project aims to demonstrate the benefit of providing open access of government datasets to researchers, planners and policy makers who deal with problems of space, place and liveability. The value will be demonstrated through four projects which cover pressing issues facing the North West Melbourne region: built environment and health, housing affordability, economic productivity and transport and sustainability. When the project is complete in March 2013, the datasets collected will be made available to ANDS and AURIN.

Spark! Energy for change

MSSI, the Australian Conservation Foundation, YMCA and Wattwatchers were awarded \$988,419 by the Department of Climate Change and Energy Efficiency, as part of its 'Energy Efficiency Information Grants Program' in 2012. The Spark! project engages and supports YMCA member associations to understand and improve literacy of energy consumption and costs. Community services provided by the YMCA are especially vulnerable to the impact of rising energy costs. The project will identify high-consuming activities and target areas, and support the YMCA to reduce energy use and costs. The University component of the work into processes and outcomes in health and behaviour will be carried out by the Nossal Institute.



Prof David Karoly

David is a renowned climate scientist who works on the IPCC and sits on Australia's Climate Commission. He led the Climate Change theme at MSSI and is now an MSSI Associate.

Campus Sustainability Centre

Vice-Chancellor Professor Glyn Davis opened the Campus Sustainability Centre in April 2012. Located on the ground floor of the Walter Boas Building (Building 163) and designed and managed by Property and Campus Services, the centre showcases sustainability-related research across our campuses. Wall-mounted screens display videos about the ways sustainability is being embedded in teaching, research, engagement and operations. The centre features a green roof demonstration planter from the Melbourne School of Land and Environment and a shallow geothermal facility which provides energy efficient heating and cooling to the ground level of the building.



This green roof module is a feature of the new Sustainability Precinct.

Zoos Victoria collaboration

The collaboration between Zoos Victoria and the University of Melbourne encompasses 23 projects. A total of 425 University of Melbourne students (both undergraduate and postgraduate) have been involved with Zoos projects in 2012 from six faculties. Key collaborative areas include: bringing Zoos Victoria's Fighting Extinction work to life; progressing Zoos Victoria's environmental performance; and advancing native threatened species research. The project is managed by Melissa Tencer from the Melbourne Engagement and Partnerships Office.

Design Innovation: the state of play for major Australian projects

In October Colin Duffield led an interactive workshop with industry investigating how highly successful large projects foster and create innovative outcomes. Key industry leaders including Peter Newman from Curtin and Yvonne von Hartel, Principal at Peckvonhartel, set the context for sustainable projects. The project was sponsored by the Department of Infrastructure and Transport via the SMART infrastructure research grant. The workshop focused on a large rail project, a hospital and the development and implementation of a large ICT telecommunication initiative. Real practices and issues confronting major projects and mechanisms to achieve innovative outcomes were discovered.



Prof John Wiseman

John is a Professorial Fellow and Associate at MSSl. He researches social, economic and political transformations to a just and sustainable post carbon future.

Seed Funding Projects

The Interdisciplinary Seed Funding Scheme provides grants for research projects that address complex problems facing society with solutions that demand an innovative and interdisciplinary approach. MSSl has been an enthusiastic proponent of the scheme, and last year five projects listing sustainability as their primary theme were selected and funded by Melbourne Research.

Place, Health and Liveability

Investigators: Carolyn Whitzman, Billie Giles-Corti, Lu Aye, Dominique Hes, Melanie Davern, Hannah Badland, Iain Butterworth, Melanie Lowe

Project summary: This project seeks evidence to inform planning for liveable growth areas. A literature review has identified existing liveability indicators, their settings

and any gaps. Overlaps and differences between the determinants of liveability, sustainability and health in urban environments have also been described. The aim is to develop a comprehensive, validated and policy-relevant liveability index.

Conceptions of human-nature relationships and sustainable action: development and preliminary testing of an interdisciplinary theoretical framework

Investigators: Kathryn Williams, Monica Minnegal, Jennifer Boldero, Peter Dwyer

Project summary: This project is developing an understanding of how actions that either benefit or harm the environment are influenced. A conceptual model was developed that proposes correlations



Judith Alcorn Patrick Gilmour and Angel Aldape doing a rubbish audit as part of the MSSl supported Rubbish to Resource project on the Parkville campus.



between patterns of social relationships and cultural biases and conceptions of human-nature relationships. An empirical questionnaire will refine the model and inform methods for testing correlations.

The oral and geological record of natural hazards of Timor-Leste and the development of a practical risk management strategy

Investigators: Steven Boger, Robyn Sloggett, Sara Soares

Project summary: Timor-Leste is vulnerable to natural hazards such as landslides and flash floods, as well as earthquakes and tsunamis, and has little capacity to respond to these. This project is producing a preliminary natural hazards map of the distribution of historic natural disasters. This helps build a predictive tool that can identify vulnerable communities and provide input into the placement of future infrastructure.

Understanding Uptake: how trust, cognition and statistical transparency influence the adoption of new models in NRM decision making

Investigators: Yung En Chee, Mark Burgman, Fiona Fidler, Libby Rumpff, Ann Nicholson, Peter Parbery

Project summary: Quantitative models for decision support, such as Bayesian Network models, while available tend to be underused by managers and decision makers. This project is gathering empirical data required to better understand factors that influence acceptance and use of models for natural resource management decision support. This is done through interviews, using a survey instrument for measuring trust.

Youth leadership and empowerment in rural East Timor: exploring a creative arts approach to sustainable community development

Investigators: Violeta Schubert, Lindy Joubert, Helen Hermann, John Hajek, Margaret Kelaher

Project summary: Although culture is said to be the fourth pillar of sustainability, there is no comprehensive development approach that focuses on it. This project collaborates with local communities in Timor-Leste, especially youth, exploring the role that culture, expression, performance and creativity play, and their transformative potential. Having identified community needs, the project is undertaking an evaluation of arts project.

MSSI-related Interdisciplinary Seed Funding Projects for 2013:

Weather forecasts for plants and animals

Coordinating Investigator: Michael Kearney

Team members: David Karoly, Kamal Puri, Warren Porter

Sustainability performance evaluation for industrial supply network

Coordinating Investigator: Colin Burvill

Team members: Samaneh Shokravi, Alan Smith, Enrique Roca, Sherah Kurnia, Danny Samson



Review and strategic directions

In September, Professor Pearson announced that he would retire at the end of 2012 and a search has begun for a successor as Director of MSSI. The incoming Director, and Craig Prebble, Executive Officer, will lead the Institute in its next phase, following a positive mid-term Review in October 2012.

The Review panel consisted of Prof Liz Sonenberg, Pro Vice-Chancellor (Research Collaboration)(chair); Prof Rick Roush, Host Faculty Dean, Melbourne School of Land and Environment; Prof Carolyn Evans, Dean of the Melbourne Law School; and Dr Kate Auty, Commissioner for Environmental Sustainability, Victoria.



Reports from the MSSI Review and reviews of the other Melbourne Research Institutes will be provided by the Deputy Vice-Chancellor (Research) to the University's Senior Executive early in 2013.

The Review noted, among many positive points, that:

- The Institute has met or exceeded most of its objectives for the first three years.
- The Institute has been very effective at engaging researchers from across the University, particularly in linking technological and social science researchers to address sustainability issues.
- Graduate students have benefited from exposure to interdisciplinary research.
- Seed grant funding provided by MSSI has been useful in drawing researchers from disparate areas together.
- MSSI theme leaders have credibility and are respected across Faculties.
- The Director's impartiality and expertise have been important in establishing the interdisciplinary credibility of MSSI and the agile formation of multidisciplinary research teams.
- The books and conferences sponsored by MSSI have been successful and well received.

While it is not appropriate to speculate on priorities to be set by the University early in 2013, it will be up to the incoming Director and the Executive Officer, theme leaders and Executive to respond to these priorities, and in particular to continue to build a harmonious relationship with Carlton Connect, with which four of our themes align, and for our MASS program to continue. It is anticipated that MSSI will establish an Advisory Board to oversee these and other strategic issues.



Dr Helen Sykes

Helen is an MSSl Associate, founder of Future Leaders and President of the Trust for Young Australians. She works for a future with social and intergenerational justice.

MSSl Visiting Fellows

MSSl attracts, selects and resources visits from three academic leaders annually, and partially supports visits by others. Our visitors typically engage in roundtable discussions with graduate students, present seminars for University researchers, and deliver public lectures.

International Fellows

Andy van den Dobbela

Delft University of Technology, The Netherlands, February–March 2012

Andy is Professor of Climate Design and Sustainability at the Faculty of Architecture and coordinator of the Green Building Innovation research program at Delft University. Predicting a global energy crisis, Andy argues that city systems will need to become more intelligent and interactive. In his lecture, *Fossil-free cities: towards intelligent cities ready for the energy crisis*, he presented ways to approach sustainable cities that are independent from fossil fuels, thereby ready for the expected energy crisis, based on studies he conducted in The Netherlands.

Paul B. Thompson

Michigan State University, USA, June 2012

Paul is W. K. Kellogg Chair in Agricultural, Food and Community Ethics at Michigan State University. MSSl and the Melbourne School of Land & Environment hosted his public lecture entitled, *The fundamental*

problem in the ethics of food security. Farmers benefit when food prices go up, but the urban poor suffer. Since about half of the world's poorest people are farmers, there is fundamental tension here. Paul's research considers whether poor farmers should have a special moral standing.

Petra Hellegers

Wageningen University, The Netherlands, June–July 2012

Petra is part of the Economics of Water at Wageningen University and is a senior water economist at the Agricultural Economics Research Institute. She carried out research for the International Water Management Institute in collaboration with the University of Melbourne between 2005 and 2007. In her public lecture entitled, *The role of water economics in food security*, Petra offered insights into how the value of water for food production is important when making decisions about its reallocation among regions, sectors and generations.

Short-term visitors, co-supported by MSSl

Johannes Alexander Schmidt

Institute of City Planning and Urban Design, University Duisburg, Essen, June 2012

Johannes is program director of the University's Joint Centre in Urban Systems. His institute's interdisciplinary research focus includes low carbon planning, governance and energy efficiency monitoring.

Pablo Ermini

Programa INTA Prohuerta, Argentina, August 2012

Pablo's work with INTA focuses on vegetable production and environmental assessment of organic farms. His recent research explores urban agriculture and the relationship between food and urban planning.



Andy van den Dobbela, Paul B. Thompson, Petra Hellegers



2012 events

MSSI devised, hosted or sponsored 37 events in 2012. They included:

- Seminars and public lectures by our international visiting fellows and other visitors.
- Workshops for staff, students and external stakeholders.
- Strategic MSSI theme group meetings.
- Meetings of chief investigators of Seed Funding Projects.

Highlights:

Societal Transformation

MSSI staged three events publicising transformation to a sustainable society. Dr Kate Auty, Commissioner for Environmental Sustainability Victoria, launched our book, *2020 Vision for a Sustainable Society*. We held a forum on National Happiness (GNH) featuring Isabel Sebastian from Bhutan's GNH Centre, Tim Fischer AC, Australia's Special Envoy to Bhutan, and John Wiseman.

Biodiversity and Conservation

Our Biodiversity and Conservation theme ran two technical workshops in 2012, The *Species Distribution Modelling Workshop* and a three-day workshop entitled *Modelling Thermodynamic Niches: The prediction of species' responses to environmental change using Dynamic Energy Budget theory* presented by Professor Bas Kooijman from the Vrije Universiteit, Amsterdam.

Food Waste

MSSI designed a *Food Waste Workshop* to create an overview of three aspects of food chain waste; retention, rescue and recovery, and to collectively identify research issues and priorities for development

to minimise food chain waste. It was attended by representatives from the EPA, seven government agencies, four NGOs, four universities, four companies, and the Australian Centre for International Agricultural Research.

Climate Change

MSSI partnered with the Royal Society of Victoria to present two innovative, public-spirited events: a public forum: *Addressing the myths of Climate Change: Science, Impacts, Adaptation*, chaired by Rob Gell, with speeches from Climate Commission's Lesley Hughes and Will Steffen and the University's Jon Barnett; and a symposium: *Climate Change Science and Impacts on Victoria*.

City Planning

A short seminar series on *Sustainable Planning* attracted academics and representatives from government and industry. Speakers included Jane Monk, Director of State Planning Services from the Department of Planning and Community Development, Elizabeth Taylor, McKenzie University Fellow, and Louis Albrechts from the Katholieke Universiteit Leuven in The Netherlands.

Health Equity

The annual Creating Healthy Sustainable Societies one-day conference provided a forum to explore the nexus between health and environmental sustainability with a focus on profiling current University research. Topics ranged from urban planning for better health, to transforming the health sector and disease and disaster management in a time of climate change. This event attracted health professionals, graduate students and policy makers.



2020 book and other publications

In 2012 MSSI produced a range of publications, including academic papers, reports, brochures and a book. We also generated or contributed to more than 20 print and online media articles.

2020 Vision for a Sustainable Society

Our chief output was a book; *2020 Vision for a Sustainable Society*. Divided into 26 chapters, the book examines a range of sustainability challenges, with each chapter identifying something that needs to change and suggesting a key action to achieve a more sustainable society. The final chapter compiles these into a 'to do' list of actions to be taken before 2020 to create a more sustainable society.

The book was written for the general reader. It was distributed free to all Victorian secondary schools and is available online: www.2020sustainablesociety.com.au

Other MSSI publications

Edwards, T. and Ingvarson, C. (2012). Perceptions and Indicators of Sustainability: A survey of Victorian local government. Melbourne Sustainable Society Institute.

Fitzsimons, J., Pearson, C.J., Lawson, C. and Hill, M.J. (2012). Evaluation of land-use planning in greenbelts based on intrinsic characteristics and stakeholder values. *Landscape & Urban Planning* 106, 23-34.

Ives, C. (2012). Sustainability Scorecard Report: A tool to help local governments set targets and assess progress towards more sustainable futures, Melbourne Sustainable Society Institute.

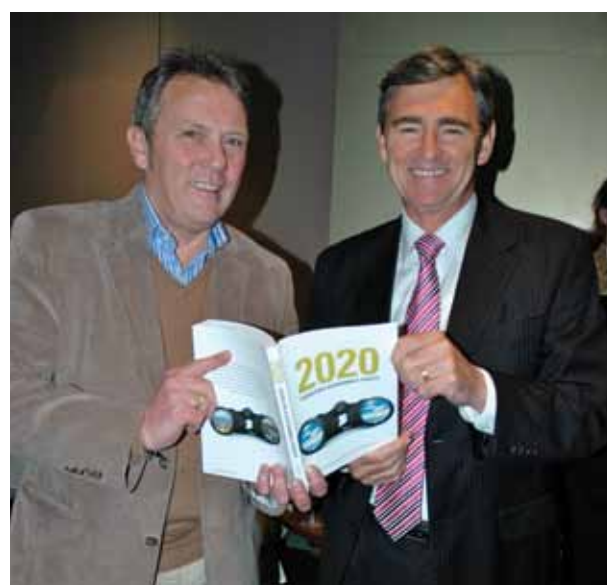
Ives, C. (2012). Sustainability Scorecard Brochure: A tool to help local governments set targets and assess progress towards more sustainable futures. Melbourne Sustainable Society Institute.

Pearson, C.J. (2012). A fresh look at the roots of food insecurity. In: *The Challenge of Food Security*, eds R. Rayfuse & N. Weisfelt. Edward Elgar, UK & USA, 19-43.

Pearson, L.J. and Pearson, C.J. (2012). Societal collapse or transformation, and resilience. *Proc. Nat. Acad. Sciences letters.pnas.org/cgi/doi/10.1073/pnas*.

Pearson, L.J., Kashima, Y. and Pearson, C.J. (2012). Clarifying protected and utilitarian values of critical capital. *Ecological Economics* 73, 206–210.

Wiseman, J. and Edwards, T. (2012). Post Carbon Pathways: Reviewing Post Carbon Economy Transition Strategies. Melbourne Sustainable Society Institute, Melbourne and Centre for Policy Development, Sydney.



David Campbell from DPI and John Brumby at the launch of the 2020 book.



Financial statement

Income

Core funding from Deputy Vice-Chancellor (Research)	\$992,250
Space and Service Charge Supplement, DVC(R)	\$30,000
Graeme Wood Foundation – sponsorship of 'Land Use Plan'	\$133,911
'Four Degrees or More?' Conference surplus	\$27,557
Visiting Fellowship for Director, from University of Manitoba	\$5,654
Other incidental income (internal reimbursements, book sales, etc.)	\$41,813
Carry forward from 2011	\$394,686
Total Income	\$1,625,871

Expenditure

Core Staff Salaries	\$403,743
Casual and Project Staff Salaries	\$338,504
Theme Leader Salary Buy-Outs	\$101,045
Societal Transformation Seed Funding Scheme	\$325,804
Research Facilitation	\$50,804
Sponsorships	\$129,500
MSSI Book, <i>2020 Vision for a Sustainable Society</i>	\$46,509
Service and space charges	\$87,454
Other operating expenses	\$79,704
Total Expenditure	\$1,563,067
 Unallocated balance (surplus) to be carried forward	 (\$62,804)



MELBOURNE SUSTAINABLE
SOCIETY INSTITUTE

www.sustainable.unimelb.edu.au

Director

Professor Craig Pearson

t: +61 3 9035 8235

c.pearson@unimelb.edu.au

Executive Officer

Craig Prebble

t: +61 3 8344 3099

cprebble@unimelb.edu.au

General enquiries

mssi-enquiries@unimelb.edu.au

t: +61 3 8344 3099

f: +61 3 9349 4218

Address

Alice Hoy Building (Blg 162)

Monash Road (Melways Ref 2B-E7)

The University of Melbourne

Parkville VIC 3010, Australia