Beyond Boundaries:
Transitions to Sustainability
16–17 December 2019
Melbourne

PROGRAM

John Monash Scholars' Global Symposium

General Sir
John Monash
Foundation

ABOUT JOHN MONASH SCHOLARS' GLOBAL SYMPOSIA

John Monash Scholars' Global Symposia bring scholars and supporters together every two years. Our aims with these symposia are to build relationships, share networks, spark debates and catalyse new and innovative collaborations, as we continue to develop Australia's future leaders.

This Global Symposium follows previous symposia in Brussels (2014), Oxford (2016) and New York (2018). There are now 202 John Monash Scholars (JMS) all over the world. They have attended over 42 universities, studied over 47 different fields, and have built networks in over 16 different industries including; health, medicine, academia, law, not-for-profit, consulting, defence, technology and think tanks. Our symposia are important occasions to come together.

This year's Global Symposium is generously hosted by The University of Melbourne and we are delighted to be located at the iconic, heritage-listed 'Old Quad', which has been beautifully restored after an extensive two-year redevelopment.

The Compendiums supplied for the Melbourne Symposium have been handmade from recycled plastics by SEW (Supporting + Empowering Women). SEW is a social enterprise that partners with HIV+ women in Tanzania. The business seeks to erode discrimination in the workforce, demonstrate the resilience and creativity of those living with the virus and create a pathway to financial independence.

SEW was established by 2019 John Monash Scholar Jessie Smith in 2008. To learn more about the work of SEW you can visit their website: **sewtanzania.com**

"Social enterprise provides important opportunities for self-determination and dignity. The women we work with run their own businesses and deal with clients all over the world. Every day they push back against prejudice, reporting that things are slowly changing for the better. We are so pleased that the General Sir John Monash Foundation are using SEW products at the Global Symposium."

Jessie Smith, 2019 John Monash Scholar and Founder of SEW

THIS YEAR'S THEME

This year's event focuses on the future: change, adaptation and sustainability, and will experiment with the way that interdisciplinary thinking can foster creative new approaches to change. We will explore the key contributions Scholars see their discipline making to future sustainability challenges, important attendant hurdles and opportunities for other disciplinary contributions to collaboratively help overcome these hurdles. This conscious focus on interdisciplinarity reflects the intellectual and disciplinary breadth of General Sir John Monash and also provides scope for Scholars to reflect more broadly on how their work approaches, or could approach, thinking across intellectual boundaries. The Symposium will highlight a meta-challenge keenly felt by many: adopting and retaining a positive mindset in the face of change.

The Symposium will emphasise group discussion built around:

- 4 core abstract challenges—overarching ethical and psychological challenges to solving a broad range of important problems relating to the future and sustainability:
  - Uncertainty about the future
  - Inertia
  - Change and endurance
  - Taking/sharing responsibility for a problem
- 6 key problems – concrete problems at the intersection of change, adaptation and sustainability.

  Each problem statement is expressed in a way that identifies:
  - Its connection with sustainability;
  - How the problem may evolve in the future;
  - Solutions that are commonly talked about and key gaps;
  - Relevance to one or more of the core abstract challenges that poses a particular problem; and
  - Opportunities for collaboration with other John Monash Scholars and their networks.

AIMS OF THE SYMPOSIUM

While we can't solve major challenges and global problems in two days, we hope the Symposium will build new insights, networks and collaborations for grappling with these problems into the future. In the short term, we intend to synthesise the key points from our discussions into a form for wide dissemination (e.g. a piece for The Conversation). Details of the attendees will be available on a private website, including a 30-second audio file from each Scholar describing their work to help each of us consider potential future collaborations. The Symposium will also form part of a research project on interdisciplinary environmental problem-solving. The data collected will help not only to build a picture of how we can connect across disciplines in general, but also inform future collaborations between Scholars. Detailed information will be distributed with Symposium materials online and during the Symposium.

PROGRAM

Format for the Symposium

The Symposium will extend over a day and half.

- Day 1 will reconnect the Scholars and introduce the four abstract challenges that characterise many of the concrete problems we will grapple with on Day 2.
- Day 2 will explore the 6 key problems in two simultaneous streams. Each person will be able to contribute to discussion of 3 key problems. For comments and ideas about any problems that you could not discuss, we will have comment walls around the room.

The sessions on both days will use the same format, the only difference being that Day 1 will be in plenary format, and Day 2 sessions will be breakout groups. In both cases, John Monash scholars will introduce the challenge/problem, and provide comment and provocation, then we will open facilitated group discussion. The intention of this format is to maximise the involvement of John Monash Scholars across disciplines and subject expertise.

Day 1: Monday 16 December 2019

11:30am–12:00pm	**Registration** Location: Old Quad, North Wing, (Building 150), University of Melbourne, Parkville
12:00–1:00pm	**Introduction to the Symposium and Welcome from Annemarie Rolls, CEO** ***Standing lunch***
1:00–2:00pm	**Abstract challenge expert panel 1: Uncertainty about the future**
2:00–3:00pm	**Abstract challenge expert panel 2: Inertia**
3:00–3:30pm	***Afternoon tea break***
3:30–4:30pm	**Abstract challenge expert panel 3: Change and endurance**
4:30–5:30pm	**Abstract challenge expert panel 4: Taking/sharing responsibility**
5:30–6:00pm	***Free time***
6:00–7:30pm	**Cocktail Reception with Welcome Address from the Vice-Chancellor of the University of Melbourne, Professor Duncan Maskell** Location: Woodward Conference Centre Level 10, Melbourne Law School , 185 Pelham St. Carlton

Day 2: Tuesday 17 December 2019

8:45am–9:00am	**Introduction to the day** Location: Old Quad, North Wing, (Building 150), University of Melbourne, Parkville
9:00am–9:30am	**Guest presentation on interdisciplinary environmental problem-solving (Professor Ruth Beilin, School of Ecosystem and Forest Sciences, Faculty of Science, University of Melbourne)**
9:30am–9:40am	**Group photo session**
9:40–11:10am	**Problem session 1 –** **Stream 1: Transitioning to a low-carbon energy system** **Stream 2: Putting people and the environment at the heart of tech systems**
11:10–11:30am	***Morning tea***
11:30am–1:00pm	**Problem session 2 –** **Stream 1: Sustainable building and construction** **Stream 2: Future cities, future transport: the role of civic leaders and individuals**
1:00–2:00pm	***Lunch***
2:00–3:30pm	**Problem session 3 –** **Stream 1: Securing and sharing water resources** **Stream 2: The political economic and social challenge of transitioning from a fossil based policy path**
3:30–4:00pm	***Afternoon tea***
4:00–5:00pm	**Re-capping and revisiting our abstract challenges** • What have we learnt from discussing our key problems? Nominate one key takeaway. • Have our discussions affected your tendency to view sustainability problems with a positive mindset? • Who wants to be involved in the follow-up dissemination piece? (also to be discussed in each panel session)

PHOTOGRAPH AND FILMING CONSENT

Please note that there may be a possibility you will photographed and/or filmed at the 2019 John Monash Scholars' Global Symposium.

There will be a photographer and a videographer attending both days of the Symposium, including the Cocktail Reception on the evening of Monday 16th December 2019. The film footage will showcase highlights of the Symposium only and be used to promote the Foundation via its website and social media platforms. Photographs taken during the Symposium will similarly be used for promotional purposes and will feature in publications such as the Foundation's Annual Report and newsletters.

For those who do not wish to have their photo taken or be captured in film footage during the Symposium, please contact the Foundation directly at **info@johnmonash.com**.

POST-SYMPOSIUM

To help synthesise the key points from our discussions into a format suitable for wide dissemination (e.g. a piece for The Conversation), after the Symposium, we will compile notes taken by the scribes and comments collected by the Q&A software. These materials will be made available in draft form to all attendees to review in case you would like to make any adjustments or corrections to comments that are attributed to you. The final form of the notes will then be provided to all Scholars for their own records, and to help future collaborative initiatives between Scholars.

The Symposium will be followed by a Public Lecture on the 18th of March 2020, which will expand on the core themes and outcomes of the Symposium.

DAY 1: ABSTRACT CHALLENGES

Uncertainty about the future

Session leader	Davis McCarthy
Chair/facilitator	Miranda Gronow
Scholar provocateur	Kathryn Roberts-Parker
Scribe	Tess Kelly

Human societies have long relied on the past to evaluate and manage the future. However, the rapid pace and extent of contemporary technological change and the compounding environmental impacts of past changes, means that the past is unlikely to provide a stable guide to the future. Developments in biotechnology and artificial intelligence, for instance, have the potential to irreversibly change human societies. Meanwhile, ongoing greenhouse gas emissions from technologies developed during the industrial revolution are creating unexpected feedback loops, resulting in more extreme and faster paced environmental change.

What does it mean for individuals, communities, businesses and governments to be casting off into this uncertain future? If we cannot rely on the past as a guide, how can individuals and organisations prepare for and make sense of the future? Do humans have the right disposition and tools (mathematical, computational or otherwise) to evaluate future risks and opportunities, without relying on the past?

Inertia

Session leader	Arjuna Dibley
Chair/facilitator	Anita George
Scholar provocateur	Marianne Haines
Scribe	Eva Mackinley

The physical laws of inertia are well known and understood: a still object will stay still, and a moving object will stay moving, in the absence of a countervailing force upon it. Despite this, human societies often fail to apply 'countervailing force' to stop or slow dangerous or damaging activities or to encourage positive ones. We continue to produce and consume goods which we know are damaging for the environment in the short term and for the economy in the long term, even in the face of alternatives.

Can the laws of physics illuminate new pathways for addressing inertia in the social world? Why do some activities have a tendency to resist changes in their state of motion more than others? What can be done about this? How can we increase the level of 'force' needed to try and commence solving large-scale sustainability problems?

Change and endurance

Session leader	May Samali
Chair/facilitator	Bridget Vincent
Scholar provocateur	Sonia Loudon
Scribe	Nick Duddy

Complex challenges tend not to have single solutions, but rather constellations of changes – often an amalgam of formal regulation, individual choices, and community or industry-led initiatives. The nature of these problems mean they can seem 'too big to fix', and serve to accentuate an anxiety about the future, or a belief that the solution(s) have to be increasingly radical to make a difference.

Implicit in this are questions of choice and endurance: how do you develop and sustain specific interests in solutions and maintain enthusiasm, even against the natural attrition that occurs with competing priorities, seemingly limited progress, or when you have a partial solution?

Do these narratives place an unfair burden on the individual? Large-scale or system change often requires connected decision pathways, and/or a high level of organisational literacy to take an idea from concept to implementation. Other than it being part of employment, does it assume a privileged enough life or lifestyle to allow people to put personal time into learning about alternatives? And what does that mean for how we conceptualise and participate in our societies?

Taking/sharing responsibility for a problem

Session leader	Brendan Jones
Chair/facilitator	Rosie Dawkins
Scholar provocateur	Rebecca Nelson
Scribe	Luke Milross

The challenges that face human societies today are complex and interrelated, and yet the approaches often employed to solve them are siloed and reductive. As a consequence, individual actors are often blamed or have to take responsibility for problems which may have bigger or more systemic roots. Take sustainably farmed agriculture. Should consumers alone take responsibility for choosing more or less sustainable food suppliers? Or should the burden fall on others in the supply chain – financiers to those suppliers, retailers, regulators or others? The phenomenon of cumulative environmental effects epitomises this problem in a broader sense. Many individually minor activities accumulate to cause significant environmental damage, such as driving a car, recreational fishing, or using and disposing of plastic straws. Individual activities also relate to the larger systems that facilitate them.

Given the inter-connected nature of modern sustainability challenges, how can more systematic problem-solving approaches be brought to bear on sharing responsibility for sustainability problems? What can we learn from branches of social and physical sciences that have well-developed approaches to systems thinking?

What can we learn from legal approaches to allocating responsibility for harm done that has multiple contributing causes? Or from decisions to regulate individually minor activities that together, cause 'death by a thousand cuts'? How can this be done without being seen as infringing on freedom of choice and tying us all up in 'green tape'?

What can we learn from how ethicists, sociologists, and political scientists assess the moral and practical acceptability of measures to impose responsibility for problems that have complex and interrelated causes?

DAY 2: PROBLEM STATEMENTS

Problem Statement – Transitioning to a low-carbon energy system
By Brett Parkinson (2017 Scholar) and Kate Griffiths (2012 Scholar)
Venue room: Library

Session leader	Kate Griffiths
Chair/facilitator	Mark Brooke
Scholar provocateur	Brett Parkinson
Scribe	Samuel Parker

1. Statement of the problem

Achieving Australia's emissions-reduction target as per the Paris Agreement requires a transition to low-carbon fuels and energy systems. The electricity sector is expected to do the bulk of the heavy lifting required for a transition, but there is, to date, no national policy mechanism to drive down emissions in the electricity market—let alone in other sectors.

2. How do you see the problem evolving in the future?

Transitioning to a low-carbon energy system is a problem that will span decades and generations. Political short-termism is likely to lead to further ad-hoc government interventions, rather than a market signal to reduce emissions. This can be influenced by maintaining an informed public discourse, but transitional pathways (in the short or long-term) that reduce both generation costs and carbon intensity are complex. They comprise a portfolio of technologies and investment options, the communication of which to the general public will require the combined efforts of engineers, politicians, business leaders, and science communicators.

3. What are the solutions commonly talked about and the gaps?

Renewable systems coupled with batteries or other forms of energy storage are advocated as key low carbon technologies. Battery storage can be effective for small-scale applications, however when implemented at grid-scale, the expense, CO_2 intensity and rare-earth material consumption of existing batteries, makes them far less competitive as a sustainable energy solution.

We currently have billions of dollars invested in fossil-infrastructure that must continue to operate to maintain our current energy reliability and availability. Market-based solutions such as carbon pricing, emissions trading and baseline and credit schemes would allow fossil-producers and users to develop pathways to utilize their existing assets in low-CO_2 ways. However, long-term and predictable pricing policy is needed to justify investment in carbon offset and reduction strategies.

4. Does this relate to an abstract challenge in particular?

Taking/sharing responsibility for the problem. The energy sector is jointly managed by state and federal governments, while many of the key players are private businesses. Cross-sector and cross-government collaboration is therefore required to implement solutions.

The energy sector is not solely responsible for reducing emissions. Other sectors also need incentives to reduce their emissions, which in turn encourages people to change their habits to reduce Australia's overall carbon footprint.

5. Where do you see opportunities for collaboration to bring about progress in this space with other John Monash Scholars?

New ideas and approaches through the cross-linking of scholar backgrounds. Using the collective power of the John Monash scholars as respected leaders in their fields to push long-term action through policy, public communication and advocacy.

Problem Statement – Putting People and the Environment at the Heart of Tech Systems
By Amy McLennan (2009 Scholar)
Venue room: University Hall

Session leader	Martin Seneviratne
Chair/facilitator	Nikki Bart
Scholar provocateur	Amy McLennan
Scribe	Ryan Parker

1. Statement of the problem

Artificial intelligence (AI), machine learning and emerging technologies raise significant sustainability challenges. Computational objects require a range of resources along the supply chain, from head (e.g. sand from riverbed mining, water, rare-earth minerals and the workforces which extract them) to tail (e.g. the millions of tons of e-waste produced every year, the places where it is dumped and the people whose lives depend on salvaging components from it). Computation is becoming more power-hungry as AI-driven systems collect, learn from and process increasing amounts of data. By 2020, the global carbon footprint of the technology sector will exceed that of Japan, the fifth largest polluting nation in the world. Data centres and network infrastructure currently make up the majority of this footprint. Overall, AI-driven systems, or cyber-physical systems, are rapidly scaling around us and deeply embedding unsustainability within them.

2. How do you see the problem evolving in the future?

Unless there is a substantial change in the way cyber-physical systems are designed, built, implemented, operated, maintained and decommissioned, we risk building a world we don't want to live in. Projections point to exacerbation of current climate challenges, inequities and human harm.

3. What are the solutions commonly talked about and the gaps?

At this stage there are mostly gaps rather than solutions. The contribution of emerging technologies to the climate crisis is rarely discussed. The people, companies and governments currently building, regulating, commissioning and using AI-driven systems rarely consider the ways people and the environment form parts of these systems.

How might we change the way we imagine emerging technology and its relationship with people and the environment? Could we educate the public, decision makers and developers to give them the skills they need to better understand the sustainability and wellbeing implications of AI-driven systems? Would this change their decisions about where and when to automate things? Should industry be more transparent and accountable? Can we question imperatives like efficiency and productivity and be more creative about the metrics and values we embed in the systems we are currently building? Do we need new types of practitioners who can do all this more systematically?

4. Does this relate to an abstract challenge in particular?

Uncertainty about the future. A question often asked about emerging technological systems is 'What will the future look like?' But in practice, the future is not pre-determined and waiting for us to arrive or predict. We are actively building it. Well, some people are. So how do we get more people thinking: 'What do we want the future to look like and how do we build for that?' Who needs to be in that conversation? How do we bring new views, voices and values into the cyber-physical systems we are building every day? Whose job is it to do this? How do we do it quickly, so the decisions we make now do not take us to a future we might not want?

5. Where do you see opportunities for collaboration to bring about progress in this space with other John Monash Scholars?

With so little being done in this area, there is significant opportunity to bring about progress towards a more sustainable tech future. There is also an urgent need to make progress given how rapidly technological systems are going to scale all around us. How might we leverage the disciplinary, sectoral and geographical diversity amongst the scholar community to identify potential ways forward? What suggestions and ideas do scholars have about how to change current assumptions about the ways technology, people and the environment interact and start new conversations about the ecological trade-offs inherent in making decisions about using AI? How might we learn from the past as we look to the future? How might we transmit new skills and information and bring more voices into technology development? Can we think more critically about the assumptions we are building into new technical systems and more creatively about how we might do things differently?

Problem Statement – Sustainable Building and Construction: keeping pace with infrastructure and energy demands
By Joe Gattas (2010 Scholar)

Venue room: Library

Session leader	Joe Gattas
Chair/facilitator	Jillian Kilby
Scholar provocateur	Brighid Sammon
Scribe	Alli Devlin

1. Statement of the problem

The Australian building and construction sectors are responsible for almost a quarter of Australia's GHG emissions.

2. How do you see the problem evolving in the future?

Improvements made towards sustainable buildings and construction are not keeping pace with future infrastructure demands; by 2050, buildings emissions are projected to grow by 78% and 154% for residential and commercial building sectors, respectively [ASBEC, CCTG. "The Second Plank: Building a Low Carbon Economy with Energy Efficient Buildings." (2009)]

3. What are the solutions commonly talked about and the gaps?

3a) Timber buildings. Recent advances in material processing, fire safety engineering, and offsite/prefabricated construction now allow us to construct high-performance 'mass timber' buildings, with March 2019 seeing completion of the world's tallest timber building, the 19 storey Mjøstårnet in Norway. Mass timber can of course absorb carbon from the atmosphere, but it is also highly renewable. The timber used in the recent 25 King project in Brisbane, the largest engineered timber office building in the world (nine-storeys), can grow back in Australian forests in 6 hours.

3b) Energy-efficient buildings. 'Passive House', 'Leadership in Energy and Environmental Design' (LEED), and similar performance frameworks provide clear guidance on how to design and construct energy efficient buildings. The mid to long-term economic benefits of such buildings are also clear, with significant reduced operating and life cycle costs. However, building tender processes incentivise construction practices that give lowest construction cost, not lowest operating or lifecycle cost.

4. Does this relate to an abstract challenge in particular?

Inertia. New solutions exist but there is substantial cost, time and risk involved in switching to a new solution.

5. Where do you see opportunities for collaboration with other John Monash Scholars?

In areas where there is a gap between technology and policy, or gap between professions interested in the same problem, e.g. affordable housing construction as viewed by urban planners, builders and building regulators.

Problem Statement: Future cities, future transport: the roles of civic leaders and individuals
By Hugh Utting (2019 Scholar) and Harrison Steel (2016 Scholar)

Venue room: University Hall

Session leader	Emma Dale
Chair/facilitator	Michaela Taylor-Williams
Scholar provocateur	Harrison Steel
Scribe	Brooke Greenwood

1. Statement of the problem

Even in light of climate change, rapidly growing and urbanising global populations, and increasing social inequality, there has been a failure of political will by our civic leaders to make meaningful steps towards creating sustainable cities. In Australia, there is firm acceptance across the public sphere about the importance of transitioning our suburban (low density), car-dependent cities into high density cities supported by upgraded public transport infrastructure. However, State and Federal Governments are spending a record amount of funds on road projects. Within the community there is strong opposition to medium density living brought about by a NIMBY ('Not In My Back Yard') mindset and the 'cladding crisis'. Australian cities are still heavily reliant on energy being powered by non-renewable sources. Has the sustainable city concept become greenwashed? Is it too political, economically and socially difficult for our civic, business leaders and/or the community to demand a fundamental rethink of our urban morphology?

2. How do you see the problem evolving in the future?

With Australia's population to double by 2050 and 80% of our economic output coming from cities, it is in our national interest to ensure that there is a positive path forward. Major projects, such as Sydney's North-West Metro, community social housing programs, including Melbourne's Nightingale Project and the Commons, demonstrate that at different scales change led by civic leaders is possible.

At an individual level, people are also becoming increasingly aware of the environmental impact of their transport choices, both intra- and inter-city. For example, we see people (particularly in densely populated areas such as Europe) preferring to travel internationally by train or boat, and electing to holiday in their own country.

3. What are the solutions commonly talked about and the gaps?

City shaping projects and social enterprises tend to benefit higher-socio economic residents and workers living in the inner regions of Australia's metropolitan regions.

However, this is increasingly occurring at the expense of mid-tier and regional town centres. The recent political upheaval in America and United Kingdom has been largely attributed to the divide between the major powerhouse economic regions, cities and small regional towns and rural areas. As such, the challenge is twofold. How do we develop the public policy tools, mechanisms and infrastructure to facilitate sustainable cities and urban morphologies that encourage sustainable transport? Secondly, how can this 'success' be shared to all different tiers of cities?

At an individual level, most common solutions in relation to transport raise different modes of travel (e.g. train vs flying). In Australia this discussion touches on the need for high-speed inter-city rail links, which may (one day!) finally happen due to environmental lobbying. What is not extensively talked about is that an alternate future of transport may rely to a large degree on consumer-facing carbon offset schemes, which are still in their infancy. What role do offset schemes play in achieving sustainable cities and sustainable transport?

4. Does this relate to an abstract challenge in particular?

The challenges of sustainable cities and sustainable transport raise questions about 'shared responsibility' that need clever strategies. What are the respective responsibilities of civic leaders, enterprises and individuals? How do these responsibilities vary between older cities, the morphology of which is largely set, and newer, 'greenfields' areas? Ultimately, the individual is at a significant personal disadvantage if they elect for more expensive, slow transport (e.g. taking a train vs flying within Europe), so it is difficult to convince anyone but the most environmentally-minded to make this choice. In order to make these alternate forms of transport more effective, can we think of better incentives/transport forms? Does this inherently require a constellation of changes that is difficult to coordinate and implement?

5. Where do you see opportunities for collaboration to bring about progress in this space with other John Monash Scholars?

Collaboration between Scholars in business with those in technology/science (working on new approaches to efficient transport, or to mitigating its environmental impact) and city planners in government.

Problem Statement – Securing and sharing water resources
By Huw Pohlner (2013 Scholar)

Venue room: Library

Session leader	Kate Smith
Chair/facilitator	Ashley Kingsborough
Scholar provocateur	Huw Pohlner
Scribe	Ruth Moorman

1. Statement of the problem

Managing scarce water resources and allocating water to meet competing demands is one of the most significant challenges the world faces this century.

2. How do you see the problem evolving in the future?

More and more countries and regions will become water-insecure as climate change reduces water availability and alters hydrological systems in some parts of the world, and water demands continue to grow (although not everywhere). Increasingly, conflicts between sectors (e.g. agriculture and cities) will threaten economic productivity, livelihoods and social harmony (not to mention ecosystems) – we need to develop new ways to adapt to reduced water availability and limit consumption of finite water resources to ensure the long-term sustainability of the resource and the economic, social and environmental values that it supports.

3. What are the solutions commonly talked about and the gaps?

The dominant approach is integrated water resources management, which focuses on recognising water as central to life, promoting participation and treating water as having an economic value. Solutions that are being pursued by governments and other stakeholders traditionally involve physical infrastructure development, use of economic instruments and regulation, nature-based approaches and transboundary cooperation. Yet progress is patchy. Influential institutions consistently point to a widening gap between the global investment required and finance actually available (e.g. for urban water and sanitation infrastructure), and 'day zeroes' are an increasingly real threat for many cities. So where is the business case breaking down? Too often, political risk, vested interests, a lack of coordination and strategy and a lack of information are preventing decisions from being made to secure water resources for long-term benefit. The critical gap is in making the case for change, developing clear strategies, forming coalitions of actors to implement required actions, and ultimately making the hard but necessary structural adjustments (e.g. reducing consumption of water by agriculture) required to ensure sustainability.

4. Does this relate to an abstract challenge in particular?

All are relevant. 'Change and endurance' is an interesting example to explore. Solutions are known and available. Different countries have positive experiences in undertaking reforms and implementing solutions to various degrees. Yet persisting with politically unpalatable changes has (unsurprisingly) not proven to be a priority for many decision makers.

5. Where do you see opportunities for collaboration to bring about progress in this space with other John Monash Scholars?

There are numerous scholars working in water resources policy, management and law. There are also opportunities to learn lessons from other natural resource management challenges (e.g. in energy). Scholars span academia, government, multilateral financial institutions and consulting, so there is good capacity for cross-sectoral collaboration.

Problem Statement: The political, economic and social challenge of transitioning from a fossil-based policy path

By Arjuna Dibley (2016 Scholar) and Fergus Green (2012 Scholar)

Venue room: University Hall

Session leader	Heather Muir
Chair/facilitator	William Witheridge
Scholar provocateur	Rueben Finighan
Scribe	Joel Paterson

1. Statement of the problem

Decades of largely ineffective climate change policies have left significant contingent liabilities on the balance sheets of firms and governments around the world. Emissions continue to rise and with each incremental increase, follow a growing likelihood of physical damage to human and economic systems, as well as economic, social and environmental costs associated with responding to this damage and its flow on effects. Australia is no exception to this global trend of mounting climate risk. In fact, it is one of its main protagonists.

Australia is among the top 20 largest emitters of greenhouse gases in the world and is also the third largest exporter of fossil fuel-based greenhouse gases, behind only Russia and Saudi Arabia. Fossil fuels—including those Australia produces—are also responsible for a wide range of other environmental, social, economic and governance challenges throughout the world, from air pollution to political corruption, from economic volatility to human rights abuses.

We already have the technical solutions to replace fossil fuels for most of their uses at reasonable cost, yet there remain many political, economic and social challenges in transitioning from our fossil-based path to a non-fossil-based path.

2. How do you see the problem evolving in the future?

If nothing is done to manage these climate risks, the social, economic and ecological implications will be significant. Those firms and their owners and managers that are best equipped to manage long term risk are already pushing their risks further down to those least able to adapt and manage them: individuals and governments in Australia and abroad. The longer governments leave a policy vacuum in managing climate risks, the more significant the changing climate will impact our society and the world. On the other hand, a well-managed approach to climate change has many advantages. An effective transition to a cleaner economy will provide immense opportunities and benefits for the vast majority of Australians (quite aside from the climate mitigation benefits).

However, effective transitions in Australia will require dealing with inevitable winners and losers. A small but significant number of workers in fossil fuel industries and communities in which production is concentrated, face inevitable challenges. The domestic electricity sector is already transitioning to a renewables-based grid (though that transition needs to accelerate), and this has begun to present challenges in places like the Latrobe Valley. But the bigger challenge lies in stopping the expansion of, and phasing out, our export-oriented coal and gas (LNG) production. In addition to the adjustment challenges facing workers and communities, capital-intensive firms in these sectors will likely continue to wage aggressive public relations campaigns, and sophisticated lobbying operations, to stymie policies and actions that threaten their profits. Unions with workers in those industries may also continue to wage an expansionist agenda. For these and other reasons, the energy transition is likely to remain a key political battleground for the next two decades of Australian politics.

3. What are the solutions commonly talked about and the gaps?

There are a number of solutions at both the abstract policy level and at the more grounded community level.

Economic and financial regulators and policymakers need to better understand the nature of climate-risk for the whole of the economy in Australia, and to regulate firms and others accordingly. This means moving beyond simply asking firms to disclose their risks, while ensuring that firms and governments have a process for transitioning vulnerable people and communities away from highly exposed industries. Proactive, inclusive, place-based regional planning and development processes are needed to build capacity within communities to recombine existing knowledge and skills, and attract new investment in sustainable industries.

Governments at different levels have a key role to play in facilitating cooperative solutions between key players (firms, unions, community representatives), investing in public goods and smoothing the transition for adversely affected workers. However, Australia does not have a strong record in this kind of complex industrial and regional restructuring. Its competitive electoral institutions and short-termist liberal-market economic institutions are not well suited to the kind of long-term, multi-stakeholder processes that these kinds of transitions demand (compare, for example, Germany's Coal Phase-out Commission). Enlightened businesses and financial institutions therefore have a key role to play, as do unions, NGOs, community groups and creative leaders who can forge new alliances beyond the party-political fray.

4. Does this relate to an abstract challenge in particular?

The role that 'uncertainty' plays in creating inertia.

Australia has a well-documented and deeply problematic fossil fuel industrial complex that makes any kind of major policy change profoundly challenging. This is made worse by the fact that firms and wealthy elites—often aided by unions—who stand to lose from the necessary winding down of fossil fuel-based industries, use their political power to make the status quo seem inevitable and to muddy the waters about the long-term effects of climate change. More widely, individuals tend to overvalue the status quo and find it difficult to imagine themselves adapting to different circumstances (industries, jobs, consumer goods), which exacerbates the problem of inertia.

5. Where do you see opportunities for collaboration to bring about progress in this space with other John Monash Scholars?

Facilitating transitions away from fossil fuels requires collaboration among affected citizens, businesses and experts from a wide variety of disciplines. The entrepreneurs in the group could be challenged to think about how business opportunities and capital can be channelled into regions that will otherwise bear the burdens of the fossil fuel phase-out. Focusing on opportunities, as well as 'risks', is important.

Humanists and artists can help people to imagine different futures and inspire them to embrace new opportunities. Social scientists could think about how bottom-up (community-led) processes and top-down (government-led) strategies and policies can best facilitate a rapid, cost-effective and politically smooth transition away from fossil fuels. Philosophers and lawyers could think about how such transitions can be done fairly and justly.

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External Guests

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Distinguished Professor Peter Corke, QUT *(Australian Universities' Consortium representative)*

Associate Professor Andrew Harvey, La Trobe University *(Australian Universities' Consortium representative)*

Professor Frances Kay-Lambkin, University of Newcastle *(Australian Universities' Consortium representative)*

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Alex Barbaro (2013)
Nikki Bart (2010)
Maria Bilal (2020)
Damon Binder (2017)
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Amy Burton (2018)
Victoria Cox (2015)
Jonty Coy (2020)
Emma Dale (2018)
Claire Daniel (2015)
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Rosie Dawkins (2007)
Alli Devlin (2020)
Arjuna Dibley (2016)
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Reuben Finighan (2016)
Kat Franklin (2017)
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Anita George (2012)
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Michael Grebla (2016)
Brooke Greenwood (2020)
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Marianne Haines (2018)
Brendan Jones (2019)
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Sonia Loudon (2018)
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Davis McCarthy (2011)
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Michaela Taylor-Williams (2019)
Tim Trudgian (2006)
Bridget Vincent (2006)
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ABN 78 099 065 184

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