



The Geographical Society of New South Wales

# Honours/Masters Conference 2015

Friday 13 November, 10am-5pm

Showcasing Honours and Masters research from across NSW universities.

Welcoming students of Geography, Development Studies, Environmental Studies and related disciplines.

VENUE

University of Wollongong  
Early Start, Building 21 Room 229

REGISTRATIONS

\$30 (includes 1-year membership to The Geographical Society of NSW)

ABSTRACTS

200 words, due 30 October

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Hosted by



UNIVERSITY OF  
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The Geographical Society  
of New South Wales

[www.geosoc.org.au](http://www.geosoc.org.au)



## Table of contents

Acknowledgement of People and Country Welcomes	2
Programme	4
Abstracts	6
Tegan Bergan Western Sydney University	6
Emily Berry University of New South Wales	6
Gail Broadbent University of New South Wales	7
Sai Sowmya Bysani University of Sydney	7
Nathan Cooper University of Wollongong	8
Elizabeth Oliver University of Wollongong	8
Charishma Ratnam University of New South Wales	9
Thomas Sewell University of Sydney	9
Marija Simic University of New South Wales	10
Lisa Smoleniec University of Sydney	10
Natalie Tan University of New South Wales	11
Minoshi Weerasinghe University of New South Wales	11
Lousia Welland University of Wollongong	12
Annie Zhuo University of Sydney	12

## **Acknowledgement of People and Country**

We meet today on Dharawal Country. We recognise the Wadi Wadi People, who are the traditional owners of this land, and pay our respects to elders past and present. We also extend that respect to other Indigenous people who are present today.

## **Welcomes**

The Council of the Geographical Society of New South Wales extends a warm welcome to all participants attending the NSW Geography Honours/Masters Conference, 2015. Established in 1927, the mission of the Geographical Society is to elevate the discipline of geography, as well as to excite and engage the public in geography. This conference began 19 years ago as an opportunity for Honours students to showcase their work and provide an opportunity to meet other people who are passionate about engaging in geographical research. Today we welcome both Honours and research Masters students, recognising the changes in educational structures that have occurred in some universities in recent times. Over the years we have witnessed fantastic presentations from students who have gone on to successful professional careers and/or PhD studies before entering the academic workforce. I am confident that today's presentations will continue this proud tradition.

Each year the conference rotates between Schools where geography is taught within the universities of New South Wales. This year the Council is indebted to the generosity of the Department of Geography and Sustainable Communities and the Australian Centre for Cultural Environmental Research at the University of Wollongong, particularly to Dr Leah Gibbs and her team, and to all those people in the GSNSW and elsewhere who have made this conference possible.

Finally, please stay connected with the Geographical Society of NSW as we continue to foster the development of geography and geographers in this state by publishing the journal *Australian Geographer*, by holding functions for postgraduate students, initiating conference travel awards for post doctoral geographers and holding events such as the NSW Geography Honours/Masters Conference. For further information, please contact the Society's Executive Officer Bronwyn Bate ([b.bate@uws.edu.au](mailto:b.bate@uws.edu.au)). Enjoy the day, make new friends and stay connected with the Geographical Society of New South Wales.

**Professor Phil McManus**  
**President**  
**Geographical Society of New South Wales**

On behalf of the Department of Geography and Sustainable Communities, and the Australian Centre for Cultural Environmental Research (AUSCCER), I warmly welcome you to the University of Wollongong. Thank you for your participation in this conference, and your contribution to geographical scholarship. I hope you find the day stimulating and enjoyable, trust you will meet interesting people and have great conversations, and look forward to seeing you at future events within and beyond the academy.

**Dr Leah Gibbs**  
**Senior Lecturer & Human Geography Honours Coordinator**  
**University of Wollongong**

# Programme

<b>Morning tea upon arrival</b>	<b>9:45</b>
<b>Welcomes</b>	<b>10:00</b>
Welcome to Country, Jodi Edwards	
Dr Leah Gibbs, Human Geography Honours Coordinator, UOW Prof. Phil McManus, President, Geographical Society of NSW	
<b>Session 1</b>	<b>10:30</b>
1 Minoshi Weerasinghe	
The impact of coal mining on visual amenity: community perspectives from the township of Muswellbrook in the Hunter Valley, New South Wales, Australia	10:30
2 Annie Zhuo	
Public perceptions of antibiotic resistance in Sydney	10:50
3 Tegan Bergan	
Residential (im)mobility in community housing NSW	11:10
4 Nathan Cooper	
Exploring ethnicity, socio-economic status and the distribution of airborne emissions in Sydney, Australia	11:30
<b>Welcome to UOW</b>	<b>11:50</b>
Prof. Eeva Leinonen, Deputy Vice-Chancellor (Education), UOW	
<b>Lunch</b>	<b>12:00</b>
<b>Session 2</b>	<b>1:00</b>
5 Thomas Sewell	
Washed Away: assessing the vulnerability of infrastructure in Watsons Bay to coastal inundation	1:00
6 Marija Simic	
Biomass hazard reduction burning: is it hiding other urban atmospheric secrets?	1:20
7 Natalie Tan	
Methane oxidation by microbial processes within Wombeyan Caves, NSW	1:40
<b>Short break</b>	<b>2:00</b>

<b>Session 3</b>	<b>2:15</b>
8 Charishma Ratnam Placing Home: how assemblages of place through mobility, materiality and nature influence attachment and risk in the Blue Mountains, NSW	2:15
9 Elizabeth Oliver Exploring the everyday performances of white anti-racists in Camden, NSW	2:35
10 Louisa Welland Cultures of Water: exploring the role of water as a home-making practice in Burmese migrant households in metropolitan New South Wales	2:55
<b>Afternoon tea</b>	<b>3:15</b>
<b>Session 4</b>	<b>3:45</b>
11 Sai Sowmya Bysani Generational change within the NGO sector: differences in the ways NGOs address food insecurity in Hyderabad, India	3:45
12 Emily Berry Who cares about Land Degradation Neutrality?	4:05
13 Lisa Smoleniec Making the shift: driving climate change action using socio-technical transition theory and political ecology	4:25
14 Gail Broadbent Social attitudes to electric cars	4:45
<b>Finish</b>	<b>5:05</b>

## **Abstracts**

**Tegan Bergan**

**Western Sydney University**

### **Residential (im)mobility in community housing NSW**

The form and function of social housing in Australia was altered by the inception of the National Affordable Housing Agreement (2009). Community housing providers (CHPs) became the preferred providers of social housing, operating with incredibly different governance capacities to state housing authorities. One such capacity was the ability to create and administer tenants residential mobility policies at an organisational level. Whilst the Federal and State governments of Australia have stressed how imperative residential mobility is to be able to respond to individual life events, life stages and the economic geography of Australia, the prioritisation of mobility has not been translated into the policies and practices of CHPs. The residential mobility of social housing tenants is an under researched area of housing studies. This study examines the role of CHPs in the social housing sector in influencing tenant-initiated residential mobility access points *within* the sector – particularly through Mutual Exchange and Transfer policies. Informed by contemporary debates in human geography, this thesis adopts the ‘Mobility Turn’s’ politics of mobility approach. Mobility of social housing tenants is an important policy issue that should be considered in the growing community housing sector.

**Emily Berry**

**University of New South Wales**

### **Who cares about Land Degradation Neutrality?**

Land degradation is a global socio-environmental issue that manifests locally. The United Nations’ new sustainable development agenda includes a specific target to strive to achieve a “land degradation neutral world”. The concept of land degradation neutrality (LDN) involves a strong focus on sustainable land management as well as landscape restoration or rehabilitation to counterbalance continued land degradation elsewhere. A critical analysis of LDN draws upon conceptual and practical challenges with ‘no net loss’ targets, noting the contextual and political factors associated with land degradation. Through in-depth, semi-structured interviews with both international stakeholders and land managers in the Far West of New South Wales, this research aims to explore whether international messages about land degradation resonate with those in charge of managing the land. The interviews with Australian land managers are currently being analysed while web-based interviews with international stakeholders are being conducted. If global discourses do not relate to local realities, possible solutions are likely to be met with resistance, neglect or indifference, ultimately making them ineffective. The comparison of top-down and bottom-up perceptions could influence the way that land degradation is approached in policy, practice and communication.

**Gail Broadbent**  
**University of New South Wales**

### **Social attitudes to electric cars**

Transport contributes some 17 percent of Australia's Green House Gas (GHG) emissions, which Australian governments have done little to mitigate. Reducing fossil fuel consumption for transport can reduce GHG emissions and many other negative externalities that have environmental, social and economic impacts. Alternative fuelled cars, including electric vehicles (EVs), can help reduce transport emissions. Social and economic factors are causing market failure for EVs in Australia. A key outcome of this research is to provide recommendations to enhance the rate of uptake of EVs in Australia. Previous research found Australians most likely to buy an EV are urban, younger, better educated, better off and more likely to act on climate change. My research focuses on assessing attitudes to EVs and personal barriers to purchase, but also whether better understandings, further education and incentives for EVs would increase the likelihood to buy. These research objectives are currently being operationalised using an online questionnaire. Analyses of international best practice of government intervention policies, a survey of EVs and Plug-in Hybrid EVs currently on the Australian market and of technical and institutional barriers to uptake in Australia will further inform conclusions drawn from this research.

**Sai Sowmya Bysani**  
**University of Sydney**

### **Generational change within the NGO sector: differences in the ways NGOs address food insecurity in Hyderabad, India**

Food security is a legal right of all people. However, the realisation of this right at the individual level presents a persistent challenge in India, and requires the actions of multiple actors, including nongovernment organisations (NGOs). By conducting in-depth inductive research, this thesis sought to explore how different NGOs in Hyderabad, India, conceive the concept food security, and then develop strategies to address this issue. It was found there are generational differences in the ways NGOs understood and approached the problem of food insecurity, which suggests there may be an emergence of a new evolutionary pathway for the NGO sector. These differences are highlighted in the way NGOs derive their legitimacy and agency to implement strategic interventions that help tackle wage-labour, own-production and pure-exchange entitlement failures. By addressing these entitlement failures, the NGO sector is seeking to enhance the capability of vulnerable communities in becoming more food secure. Striking differences between the generations were revealed in the ways the NGOs established their credibility, and navigated challenges prevalent in the sector, namely inadequate funding and resources, insufficient volunteers and the government. These insights are significant for positioning the current and potential roles of the NGO sector in addressing food insecurity.

**Nathan Cooper**  
**University of Wollongong**

**Exploring ethnicity, socio-economic status and the distribution of airborne emissions in Sydney, Australia**

In Australia much attention has been given to systemic racism, particularly in areas such as health. However, minimal attention has been given to systemic racism operating through exposure to environmental hazards ('environmental racism'), which has received substantial attention in the US and elsewhere. Using 2011 census data and 2011/12 National Pollutant Inventory data, this study aims to address this paucity of research by investigating the correlations between ethnicity and airborne emissions in Greater Sydney, and the influence of other population variables on these correlations. Furthermore, the influence of scale, population estimation and pollution measures are investigated. The study found that 'majority' Anglo-Celtic ethnicities were the least likely to be exposed to airborne emissions, but 'minority' ethnicities of migrant backgrounds were the most likely to be exposed to high levels of emissions. These relationships are partly due to the relationship between ethnicity and socio-economic status, but this varies with the scale and population estimation method adopted. The study demonstrates the presence of racial hierarchies in Greater Sydney operating through exposure to emissions, as well as the importance of accounting for the influence of scale and population estimates in future environmental racism studies.

**Elizabeth Oliver**  
**University of Wollongong**

**Exploring the everyday performances of white anti-racists in Camden, NSW**

Many studies have detailed the presence of racism in Australia, however only a small body of research has studied performances of *anti-racism*. Camden, in south-western Sydney was the focus of intense media scrutiny in 2007, when a group of residents strongly opposed the development application for an Islamic school on the outskirts of the town. This project explored the experiences of white anti-racists in Camden, in the aftermath of this event. The project aims were to explore the everyday performances of white anti-racists living in Camden and to analyse media representations of Camden in light of the Islamic school incident. White anti-racists are of particular interest as they outwardly 'fit' in predominantly white neighbourhoods, but their commitment to anti-racism can profoundly affect their belonging. This project discusses the relationships between racism, anti-racism, place and belonging. It reveals that anti-racism influences belonging in complex ways – by either bolstering it, or undermining it. Equally, belonging shapes anti-racism at the local scale in diverse ways. For some residents of Camden, a strong sense of local belonging motivated their anti-racist activities. For others, this sense of local belonging led to place-defending and the denial of racism, thus inhibiting critical engagement in anti-racism.

**Charishma Ratnam**  
**University of New South Wales**

**Placing Home: how assemblages of place through mobility, materiality and nature influence attachment and risk in the Blue Mountains, NSW**

The concept of place attachment is the bonding of people to place, which influences their development of a sense of place and how those places are perceived. The home is a matrix of social and physical constructions that has multiple symbolic and ideological meanings at personal and community levels. Place attachment can be associated with the home since it is a frequently visited place where person-place bonds can be fostered. This research explores the relationship of place attachment and the home in a bushfire prone community with a focus on verbal, visual and sensory experiences. The analysis is drawn from qualitative data garnered from a visual and mobile methodology called 'Photovoice' and in-depth interviews to investigate key narratives, visual conceptions and motivations for forming attachments to place. An 'assemblage of place' was established in this study that contributed to how perceptions and experiences of bushfire risk offered context for constructions of place attachment to the home. These constructions recognised a triadic relationship of attachment through mobility, attachment to materiality and attachment to nature that build on existing knowledges of place attachment. The conceptualisations of attachment in this project were enacted through non-normative and innovative non-verbal and visual methods.

**Thomas Sewell**  
**University of Sydney**

**Washed Away: assessing the vulnerability of infrastructure in Watsons Bay to coastal inundation**

With population and critical infrastructure focused on the coastal fringe, Australia is potentially highly vulnerable to coastal inundation. To demonstrate the utility of the recently developed COVERMAR probabilistic, multi-hazard framework it is important to show that it can be expanded and applied to new sites. This paper describes the application of the COVERMAR framework in a new area, Watsons Bay in Sydney, Australia. Twenty one storm surge and tsunami inundation scenarios were modelled with exposure, vulnerability and economic cost estimates calculated in each case. The results indicate that currently, the exposure of Watsons Bay to tsunami events is relatively low, but increasing sea levels will lead to higher levels of exposure and vulnerability. Storm surge scenarios followed similar patterns but were projected to cost significantly less than the most severe tsunami scenario. Vulnerability analyses of small vessels, determined that the tsunami scenarios causing the highest exposure were not the most likely to destroy moored vessels. There will likely be detrimental impacts on cultural assets which could exacerbate community mental trauma and lead to economic downturns. The results have significant implications for emergency management in Sydney and demonstrate that COVERMAR is a valuable risk assessment tool.

**Marija Simic**  
**University of New South Wales**

### **Biomass hazard reduction burning: is it hiding other urban atmospheric secrets?**

This research compares methane (CH<sub>4</sub>) emissions from two major sources in and around Sydney: smoke from bushland fire hazard reduction burns (biomass burning), and natural gas leaks from the urban distribution system. To compare the concentration and extent of CH<sub>4</sub> emissions from biomass burning and natural gas leaks, the concentration of CH<sub>4</sub> ([CH<sub>4</sub>]) was measured continuously. Ambient air samples were collected at [CH<sub>4</sub>] peaks in the biomass burning plumes, and adjacent to leaking gas mains for further isotopic analysis. Biomass burning was shown to emit significantly higher [CH<sub>4</sub>] compared to urban gas leaks; with smoke from controlled burning covering in a plume of CH<sub>4</sub> 0.200 ppm above background. Through the use of Keeling plots we found that Sydney's natural gas has an isotopic signature of -42‰, and that smoke fumes from biomass burning around Sydney's eucalyptus forests and woodlands have a unique isotopic signature of -56.3‰. The distinct isotopic signatures of these two sources can be used in future plume dispersion modelling to assign fluxes to each source. The research also highlights the need to consider the global environmental impacts of controlled burns for fire hazard reduction, and reconsider the costs and benefits of protecting local versus global assets.

**Lisa Smoleniec**  
**University of Sydney**

### **Making the shift: driving climate change action using socio-technical transition theory and political ecology**

In the context of mounting concerns over anthropogenic climate change and the robust action required for mitigation, a growing field of research, transition studies, has emerged. A prominent transition theory is the socio-technical transition theory (STTT). A lacking engagement with influence, power, conflicts and alternative trajectories has been a criticism of the STTT. Literature that has attempted to address these concerns have tended to compromise the holistic nature of transitions in the process. Furthermore, there has been limited study of socio-technical transition scholarship in the Australian context. Tools from political ecology were integrated with the socio-technical transition theory to generate new knowledge on transitions towards sustainability in the Australian context. Via a multi-method approach, a novel conceptualisation for understanding and accordingly guiding transition processes was proposed and tested. It was identified that an understanding of underlying processes shaping niche governance and regime management processes, is essential for the informed identification of factors and trends in transitions, and thus the capacity to suggest interventions. Accordingly, we have proposed how sustainability initiatives, such as the Home Insulation Program could be improved. Furthermore, we have examined the current Australian electricity sector, and suggested how its decarbonisation transition is likely to emerge and progress.

**Natalie Tan**  
**University of New South Wales**

### **Methane oxidation by microbial processes within Wombeyan Caves, NSW**

Little is known about the behaviour of methane and mechanisms for its depletion within caves. Current theories suggest that CH<sub>4</sub> is depleted by methanotrophy within overlying soil and rock, or through oxidative ions in underground air. We hypothesised that microbial oxidation is the dominant process for methane depletion within caves. To test this, we aim to fit the Rayleigh (1896) distillation model to cave-air methane concentration and isotopic signature data. Microbial oxidation has a characteristic rate of decay ( $\alpha$ ). We collected cave-air, soil-air and background atmospheric air samples at Wombeyan Caves and analysed their concentrations and isotopic compositions of carbon dioxide and methane to determine source and background values. One cave was consistent with our current understanding. In another, cave-air exhibited methane depletion as a function of <sup>13</sup>C abundance, which is diagnostic of methanotrophy. We obtained  $\alpha$  values that were consistent with aerobic methane oxidation, providing new evidence for the microbial oxidation of methane within caves. The Rayleigh model is a suitable method for explaining methane depletion in caves. The sensitivity of  $\alpha$  to climate and seasonal variations must be validated in other caves to allow for better accounting of karst landscape as methane sinks in global climate models.

**Minoshi Weerasinghe**  
**University of New South Wales**

### **The impact of coal mining on visual amenity: community perspectives from the township of Muswellbrook in the Hunter Valley, New South Wales, Australia**

This paper explores the overall impact of coal mining on visual amenity in the township of Muswellbrook in the Hunter Valley, New South Wales, Australia. Visual amenity refers to the overall visual benefit and pleasantness that is provided by the environment. Due to its subjectivity, limited studies of community engagement concerning this topic have been conducted. This study aims to address this knowledge gap by obtaining perspectives from the local community on the following areas: values placed on visual amenity, perceived impacts of mining on visual amenity and visual mitigation measures through community engagement. This research shows that the majority of participants consider visual amenity as an important aspect of community well-being. The most frequently identified impacts on visual amenity included open cut mines and their associated infrastructure, dust, overburden and increased roads, traffic and mining vehicles. Participants varied in their opinion concerning the efficacy of the mitigation measures that are currently in place. The most effective mitigation measures identified were vegetation screening, reshaping and rehabilitation of mining areas and accelerated progressive rehabilitation. The findings have significant implications for the management of cumulative impacts on visual amenity from current and future mining activity in the area of Muswellbrook.

**Louisa Welland**  
**University of Wollongong**

**Cultures of Water: exploring the role of water as a home-making practice in Burmese migrant households in metropolitan New South Wales**

This thesis investigates the role of water as a home-making practice in the domestic activities of Burmese migrant households in NSW. Investigating domestic water is an urgent and timely matter. This is due to increasing pressures from climate change, population growth and rising affluence that are reducing the coping abilities of water security networks, particularly in Australia. Secondly, urgency arises from the volume of water that is consumed by Australian households. Focusing on Burmese households, this thesis considers how ethnic minority groups hold 'imaginative capacities' in order to use water more sustainably. The conceptual framework follows an approach which understands water as an embodied home-making practice and considers the reciprocal relationships between users and water. Empirical data was sourced through interviews and home insights, providing results that reveal in-depth understandings of lived experience. Attention is paid to drinking and hygiene practices, exploring how water is used to (re)create sense of home and self. Whilst many migrants change practices, certain practices are retained to maintain roles and responsibilities and to make home feel 'right'. The findings illustrate that through intimate connections with water, migrants have a greater sense of responsibility surrounding water use. This may have implications for household sustainability policies.

**Annie Zhuo**  
**University of Sydney**

**Public perceptions of antibiotic resistance in Sydney**

Antibiotics are one of the most commonly used drugs in medicine. The overuse of them globally has contributed to the development of antibiotic resistance. Antibiotic resistance is a significant risk to life manifest at multiple scales from the individual level of the human body to disasters such as bacterial epidemics and pandemics. The misuse of antibiotics in the community is a significant contributor to the development of antibiotic resistance. From a disaster risk management perspective, engagement of multiple stakeholders including the general public is important. This study examined perceptions of the risk of antibiotic resistance and knowledge, attitudes and practice with antibiotics, among the general public in Sydney. A questionnaire was used to collect information and views of the general public from across Sydney. The study found that most respondents had heard of antibiotic resistance but many held misperceptions about the causes and impacts of antibiotic resistance to themselves and the community. Many respondents did not perceive their own role as important in the management of antibiotic resistance. Significant differences in knowledge and perception were found at local scales between suburbs in Sydney. The study has important implications for the design of public awareness and education campaigns.