

# Greening Suburban Travel

Research Scholarship (Masters) in Low Carbon Mobility



# Greening Suburban Travel

## Motivation

Transport activity is one of the major sources of emissions related to the combustion of fossil fuels in Australia. In 2010, transport contributed 83.2 Mt CO<sub>2</sub> or 15.3% of Australia's net emissions with road transport accounting for 71.5 Mt CO<sub>2</sub> or 86% of national transport emissions. Passenger car usage in urban areas was the largest transport source, contributing 8.5% of Australia's net emissions and accounting for around 39.7 Mt CO<sub>2</sub>. This project focuses on the most significant challenge to Green House Gas (GHG) reduction in urban transport -- specifically, that relating to provision of public transport and active travel options for low density suburban areas that are currently car dependent.

## Aims and Objectives

The overarching aim of this [research](#) is to reduce GHG emissions from passenger car usage in (sub)urban areas. This research is fundamentally an investigation into new methods to provide suburban public transport and active travel options that offer efficient, affordable and flexible trips while reducing reliance on private vehicle use. There are several components to this proposal which will enable a research scholar to investigate interesting questions that are of immediate practical importance. These include assessment of tools for demand forecasting and understanding the demand for (sub)urban travel in the age of connected mobility, and how carbon emissions can be best mitigated using proposed intervention measures.

Specifically, this research will comprise the following tasks:

- Investigations of international best practices and trends in the provision of high-priority, transformative initiatives to tackle the mobility challenges facing suburban communities
- Investigations of travel demand and determinants of shifts in travel behaviour from private vehicles to public transport and active transport
- Investigations of sustainable transport planning studies focusing on pathways to increasing customer usage of public and active transport
- Investigations of the impacts and benefits of selected emerging disruptive transport technologies

## Outcomes and Deliverables

This project will identify and evaluate a number of high priority interventions for greening suburban travel. These include on-demand public transport, autonomous and semi-autonomous self-driving shared mobility services, electric vehicles, smart buses and active transport initiatives.

The successful completion of this research will result in deliverables which can be of direct benefit to end users including government agencies with responsibility for the planning and delivery of transport infrastructure and services, and the community at large. The research outcomes will also provide opportunities for public private partnerships, app developers and service providers to deliver new suburban mobility systems and options to replace car usage with on-demand access to low carbon vehicles and public transport systems.

## Position Description

A position description with more information about the University, the stipend being offered and the key selection criteria that must be addressed by applicants is attached.

## POSITION DESCRIPTION:

### SECTION A: Position context

<b>Position title</b>	Masters Research Scholarship – CRC for Low Carbon Living
<b>Position number</b>	2016_Masters_LCM
<b>Classification</b>	Low Carbon Mobility
<b>Organisation Unit</b>	Faculty of Science, Engineering and Technology
<b>Effective date</b>	June 2016

### POSITION PURPOSE:

A Masters scholarship (A\$30,000 per annum for 2 years; \$5,000 operating) is available for Australian residents who have graduated with an Honours degree in disciplines appropriate to the Low Carbon Mobility theme in the CRC for Low Carbon Living's research Program (<http://www.lowcarbonlivingcrc.com.au>)

Sustainability in the built environment is dependent on the successful education and development of the next generation of researchers, built environment specialists and communities. A primary objective of the CRC Low Carbon Living is to provide the opportunity for committed individuals to undertake higher degrees by research that will contribute to low carbon living and to the gathering momentum of this research.

The location for this scholarships is at the Swinburne University of Technology campus at Hawthorn in Melbourne. In addition to receiving academic support from the University, research students have strong input from local industry and government.

### UNIVERSITY INFORMATION:

Swinburne University of Technology has a long, proud history of educating and training students for over 100 years. Swinburne focuses on providing high-quality, career-oriented education with strong links to industry and the community. Swinburne currently has over 54,000 students.

In recent years, Swinburne has progressed to become one of the world's leading universities, ranking as one of the top 400 universities in the world, as assessed by the Academic Ranking of World Universities, and one of the top 75 in the world in physics.

In 2016, the QS World Universities Rankings classified Civil and Structural Engineering, where the successful candidate will be placed, in the top 151-200 band in the world and the 14<sup>th</sup> in Australia.

Swinburne's emphasis is on high-quality, engaged teaching and research in science, technology, business, design and innovation – teaching and research that makes a difference in the lives of individuals and contributes to national economic and social objectives.

Swinburne works to advance quality research through partnerships with industry, our communities and other universities within Australia and internationally, to achieve outcomes that are directly relevant to industry and society. Swinburne's future vision is outlined in the University's 2020 Plan.

Swinburne is a multi-sector provider and offers Higher Education, Vocational Education and Pathways and TAFE courses and programs, along with online education in partnership with Open Universities Australia and through Swinburne Online. The University has multiple campuses in Melbourne, Australia, and also an international campus in Sarawak, Malaysia.

Swinburne values and embraces its diverse work environment. The University is committed to the principles

of social justice, equal opportunity and cultural diversity, and seeks to implement these in the conduct of our activities and relationships. Swinburne has been recognised as an Employer of Choice for Women since 2007. As a university, we recognise the need to capitalise and nurture the skills and talents of all segments of our diverse community. Swinburne's culture is characterised by a set of values which inform the way we work together and enable us to deliver outstanding results.

Swinburne recognises the importance of providing career development and advancement opportunities for all employees, both in its academic and professional services areas.

Along with Swinburne's commitment to supporting career development, the University also offers a range of employee benefits such as attractive study discounts, discounted private health insurance, transport and travel discounts and flexible work arrangements.

## **FACULTY INFORMATION:**

### **Higher Education at Swinburne consists of three Faculties:**

Faculty of Science, Engineering and Technology (FSET)

Faculty of Business and Law (FBL)

Faculty of Health, Arts and Design (FHAD)

Research and teaching linkages to low carbon built environment design, governance and human behaviour are present in all faculties, as well as Swinburne's research centres (Institute for Social Research and Centre for Sustainable Infrastructure and newly established centres in FBL).

### **FACULTY OF SCIENCE, ENGINEERING and TECHNOLOGY**

The Faculty of Science, Engineering & Technology has established research centres in computer and software engineering and sustainable infrastructure, as well as research centres related to electric vehicles, smart appliances and intelligent transport systems – all highly relevant to innovation that can deliver low carbon futures.

### **FACULTY HEALTH, ARTS and DESIGN**

The Faculty of Health, Arts and Design will drive Swinburne's 2020 aspirations to increase the University's teaching and research activities in design, health and education. The Faculty encompasses well-established scholarship, teaching and highly recognised research in the fields of Psychology and Social Sciences, as well as Communication and Design in its many forms. The alignment between health, arts and design builds on existing links between these disciplines to enable development of exciting, new programs with relevance to the Co-Operative Research Centre for Low Carbon Living.

### **FACULTY OF BUSINESS & LAW**

The Faculty of Business and Law is home to our highly regarded teaching and research programs within Swinburne Business School and Swinburne Law School. The faculty's research spans a range of traditional and emerging concerns in business and society, including consumption and environmental impact. Our research recognises the diverse challenges facing business enterprises across the private, community and public sectors. The practical, evidence-based research we do seeks innovative solutions to economic and social problems in the business domain.

## **PARTICIPATION ON COMMITTEES:**

The appointee will attend and contribute to occasional staff meetings as requested.

**SUPERVISION REPORTING RELATIONSHIPS:**

<b>This</b> positions' supervisor/manager	Principal supervisor Associate Professor Hussein Dia
Other positions reporting to <b>this</b> position	NIL

**LOCATION:**

This position is located at the Hawthorn campus but the incumbent may be required to undertake duties at any of the University's campuses. Thus the incumbent must be willing to travel between campuses and work at a range of locations.

**SECTION C: Key selection criteria**

Application letters and/or resumes must address these key selection criteria. Preferably, applications should not exceed six (6) A4 pages in total. A copy of the academic transcript must also be included.

<b>Qualifications:</b> Include all educational and training qualifications, licences, and professional registration or accreditation, criminal record checks etc. required for the position.	<b>Essential/ Preferable</b>
1. A Bachelor degree honours in a discipline relevant to the research topic: Greening Suburban Travel	Essential

<b>Experience/Knowledge/Attributes:</b> Required by the incumbent to successfully perform the positions key responsibilities.	<b>Essential/ Preferable</b>
2. Experience of and interest in a field of research related to delivery of a low carbon mobility	Essential
3. Strong English communication skills, both written and oral	Essential
4. An ability to work both independently and as part of a multidisciplinary group in collaborative manner	Essential

**FURTHER INFORMATION:**

For further information about the scope please contact Associate Professor Hussein Dia (HDia@swin.edu.au)  
Tel: (03) 9214 5280

**DUE DATE FOR APPLICATIONS:**

All applications should be submitted to HDia@swin.edu.au before 27-May-2016.