

Climate Data – Applied Research Group

Prospectus for the formation of an MSc level group conducting research to develop business applications from climate data

Emergent data power is driving new risks and opportunities for Australian businesses

Overview

The climate models used to inform policy decisions are becoming increasingly useful and their output has evolved from generic data at a continent and sub-continent scale to now being able to provide more detailed projections of multiple climate variables at a regional and sub-regional level (50 -100km grids). The ability also exists to take these variables and downscale them to 20, 10 and even 2km scales over specific regions.

This emergent data power creates an interesting new feature in the business landscape; it basically plays an enabling role. For example could enable:

- Investors to screen out investments with low climate resilience.
- Product developers to formulate new materials, ones able to withstand higher temperatures.
- Agriculture and tourism to assess the risks of climatic shifts on their business models.

- Insurers to understand levels of risk and amend the risk transfer mechanism.
- Energy and natural resource companies to identify asset vulnerability and plan accordingly, and
- Commodity traders and speculators to develop pricing strategies for commodities ranging from copper to coffee.

Businesses from nearly all sectors acknowledge the requirement to learn how to work with the output from climate models. They understand that they either need to learn how to use the data themselves or face the risk that competitors or investors will use the data against them.

The challenge to business is how to develop this capability.

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The Research Group

The objective described in this prospectus is the formation of the capacity to develop application from climate data. The group will consist of 10 – 12 students enrolled in MSc level research at the universities within the ARC Centre of Excellence for Climate System Science. (*Inter alia* UNSW, Monash). The students will likely be drawn from those Australian businesses that have identified a need to develop their capacity in this area and that are willing to fund their staff to conduct research specific to their requirements. However, students might also be attracted independently to focus on specific problems or topics required by Business.

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“Time to think”

Multi-faculty approach

The key resources for the research will be the extensive and complex climate datasets and composites such as the NSW and ACT Regional Climate Model (NARClIM). However, the businesses that will sponsor the students are likely to have very different research needs in terms of developing applications. Consequently it is intended that the MSc supervision be run across additional faculties where required. I.e. A student from Sydney conducting research for a bank may be associated with both the ARC Centre and the UNSW Business School. A student from Melbourne conducting research into strategic planning for large-scale mining operations may be enrolled in both the ARC Centre and the University of Melbourne Mining Department.

Research Topics

Although the subject matter and base data for the research will be common, namely the climate data, the specific application that the sponsoring business has will be different. As part of the initial discussion on the enrolment process Climate Policy Research will work with the sponsoring business to identify possible research topics.

The MSc Courses

The enrolment will be for two years on a full time basis. (Part time options may be available but only where the work duties performed by the student at their employer is sufficiently aligned with the research scope. E.g. a student who had the role of statistician or data analysts with their employer may be able to complete the MSC level research working three days a week over the two years.

The research will be jointly supervised by the staff from the University (internal academic supervision) and by Climate Policy Research Pty Ltd acting on behalf of the sponsoring business (external supervision).

Fee structure

The fees for the student to enroll on the two year MSC research program are shown in the table below. The enrolment fee provided by the sponsoring business, when combined with the funding that the University receives from the Govt., covers all the costs associated with the student’s study.

Table 1: Fee structure

Fee component	Fee provider	Fee / year	Total for two year MSc
MSc Enrolment fee payable to the University and assuming the student is an Australian or New Zealand citizen	Sponsoring business	Option 1: \$10,000 where the living expenses are funded by the employer	\$20,000
		Option 2: \$30,000 where the living expenses are not funded by the employer	\$60,000
MSc External supervision fee payable to Climate Policy Research Pty Ltd	Sponsoring business	\$30,000	\$60,000
Total for Option 1			\$80,000

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The external supervision fee paid to Climate Policy Research covers the management of the research activities on behalf of the sponsoring business, the regular supervision of the student, the running of collaborative seminars and the liaison with the sponsoring business to ensure that the agreed direction of the research is being pursued.

Tax concessions

The sponsoring of the MSc level research may be eligible for tax concessions under the Research and Development rules- sponsoring business should consult tax specialists for guidance on this aspect.

Option1: Living expenses

The living expenses for the students are the responsibility of the sponsoring business. Based upon discussion to date it is anticipated that the sponsoring business will select students from their own staff and the payment of the living expenses will be through the business parole mechanism.

In that situation the Option1 enrolment fee would apply.

The Option 2 fee would only apply if their employer did not provide the student with any living expenses.

The Students

It is the responsibility of the sponsoring business both to identify suitable candidates for enrolment and to define a specific research question that they seek input on. The students must be able to meet the Universities enrolment requirements in term of level of education. Most research projects will require the student to develop the capacity to code, use models, process “big data” and manipulate these to suite business’s interests.

Students therefore will likely to already have a BSc qualification and quantitative skills.

Collaborative Approach and Intellectual Property.

The objective of the research group is to be collaborative. Students will be required to present and discuss their research ideas and progress at regular meetings and seminars. It is a requirement of the MSc award that students publish their research. Any student enrolled in an MSc does so under the individual Universities’ IP agreement.

It is understood that situation may arise in the later stages of the MSc course where the research creates valuable and sensitive intellectual property. It is the responsibility of the sponsoring business, student and University supervisors to identify and communicate issues relating to IP consistent with an agreed IP agreement so that any concerns can be addressed.

Timeline

The objective is to have all the students enrolled and the logistics finalized by 30 May 2015 in order to commence the research activity in late July 2015.

Next steps

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