**PhD Project: *Understanding linkages between flow, organic matter and vegetation establishment in urban streams.***

The University of Melbourne, Waterway Ecosystem Research Group.

Supervisors: Dr Sam Imberger, Dr Joe Greet and Dr Matthew Burns

The impacts of urban land use change on stream hydrology, geomorphology and hydraulics are increasingly well studied. However, understanding of how these factors interact to ultimately drive organic matter dynamics and in-stream vegetation establishment and composition is lacking. Efforts to restore and protect natural flow regimes in urban streams are rapidly gaining pace; however, we lack sufficient understanding of which flow and hydraulic metrics influence sediment and organic matter dynamics and how they interact to effect in-stream vegetation establishment and composition. Understanding these mechanisms is critical to informing stormwater and urban planning, and the effective management of streams in the urban landscape.

This project will broadly investigate how varying flow and hydraulic metrics influence sediment, organic matter and plant propagule retention and storage, and how this effects instream vegetation establishment. The project will be undertaken as part of the Melbourne Waterways Research Practice Partnership (MWRPP) and based in the Waterway Ecosystem Research Group (WERG) – a world leading research group. This will provide the successful applicant with a uniquely valuable work environment as part of a multidisciplinary team of eco-hydrologists, geomorphologists, stream ecologists and riparian ecologists. Furthermore, the close partnership with Melbourne Water will facilitate collaborative research and the effective translation of findings into policy and management; with ultimate benefits for stream health and the liveability of urban communities.

We are offering a PhD top-up Scholarship of $15,000 per annum, plus fieldwork expenses of $5,000 per annum for a highly competent and enthusiastic student to undertake this research. The student will need to obtain an Australian Postgraduate Award (APA) scholarship at the University of Melbourne (or be competitive for an international postgraduate scholarship: IPRS, MIRS). Thus, a first-class honours or master’s degree, and/or evidence of publishing in international peer-reviewed scientific journals will be essential. Information regarding scholarships and admission for the University of Melbourne can be found here: <https://study.unimelb.edu.au/find/courses/graduate/doctor-of-philosophy-science/>

The successful applicant will have an appreciation of plant and aquatic ecology and good quantitative skills, ideally with basic literacy in R (or a willingness to develop such skills). Importantly, this project requires an independently-motivated candidate with excellent communications skills as you will be required to work effectively with researchers across disciplines and industry practitioners. The preferred starting date for this project is early-2020.

Applicants should submit an expression of interest, including a 500-word personal statement outlining your interest in the research and relevant skills and experience, a CV, academic transcript and contact details for two academic referees. Please send your EOI to: Dr Samantha Imberger, The University of Melbourne, [Samantha.Imberger@unimelb.edu.au](mailto:Samantha.Imberger@unimelb.edu.au)

If your EOI is successful, you will apply for the postgraduate program through the Faculty of Science.  For domestic applicants, the Faculty’s deadline is 31 October 2018, and for international applicants the deadline is 30 September 2018.

**Closing date for expressions of interest is midnight September 22th 2019 for both international and domestic applicants.**