Date: Friday, 30 July 2021
Time: 12:00pm – 1:00pm

Speaker: Dr Patricia Menendez (Department of Econometrics and Business Statistics at Monash University)

Venue: Zoom

Title: Far and Close: Selective Sample Enrichment to Deal with Multicollinearity in Geographically Weighted Regression.

Abstract: Geographically weighted regression (GWR) is a popular technique to deal with spatially varying relationships between a response variable and a set of predictors. However, GWR estimates might be affected by multicollinearity issues related to locally poor designs. In this study, we propose two regularization methods to deal with those issues. The first one is based on a generalized ridge regression, which can also be seen as an empirical Bayes method. We show that it can be implemented using ordinary GWR software with an appropriate choice of the weights. The second one augments the local sample using an enrichment strategy. The methods will be illustrated with simulations and with an example of housing prices in the city of Bilbao (Spain).

Bio: Patricia Menéndez is a lecturer at the Department of Econometrics and Business Statistics at Monash University Business School. Patricia’s research interests include statistical inference, methods for time series, computational statistics, data visualisation tools, and data science tools.