Bayesian Econometrics Masterclass

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This session will look at some of the reasons why researchers in Agricultural Economics might consider using Bayesian methods for statistical inference. It will start with some simple comparisons between Bayesian and Classical practices, highlighting both the similarities and differences, but without taking a position that one is necessarily better than the other. These comparisons will be in terms of how the two groups think differently about their results even when they look very similar, along with how the two groups differ in the way they report results.

The talk will then cover some of the key concepts used in Bayesian inference (e.g. the prior, likelihood, posterior and marginal likelihood and how they relate to each other) along with brief discussion of Monte Carlo Markov Chain methods from a practical standpoint, emphasising how concepts like "convergence" might differ when using Bayesian *vs* Classical approaches. A range of software that is now available for conducting Bayesian inference, will then be overviewed with some applied examples (e.g. regression) using Winbugs and STAN, which is arguably the most powerful user-friendly Bayesian Software currently (and freely) available.

The key messages will include:

i.   Bayesian methods are becoming easier to use all the time;
ii.   You do not need to be a 'pure' Bayesian in order to use Bayesian methods; and,
iii. You should not fall into the trap of believing that Bayesian methods are necessarily more subjective that Classical ones.

Researchers will hopefully leave the class with a better perspective as to why and how Bayesian inference might be useful to them at a practical level without any insinuation that what they currently do is wrong.

This introductory Masterclass is intended for practitioners, academics, and policy makers. It assumes some prior experience in econometric methodologies. Bringing along laptops with Winbugs installed is recommended, though not essential.

Winbugs: https://www.mrc-bsu.cam.ac.uk/software/bugs/the-bugs-project-winbugs/