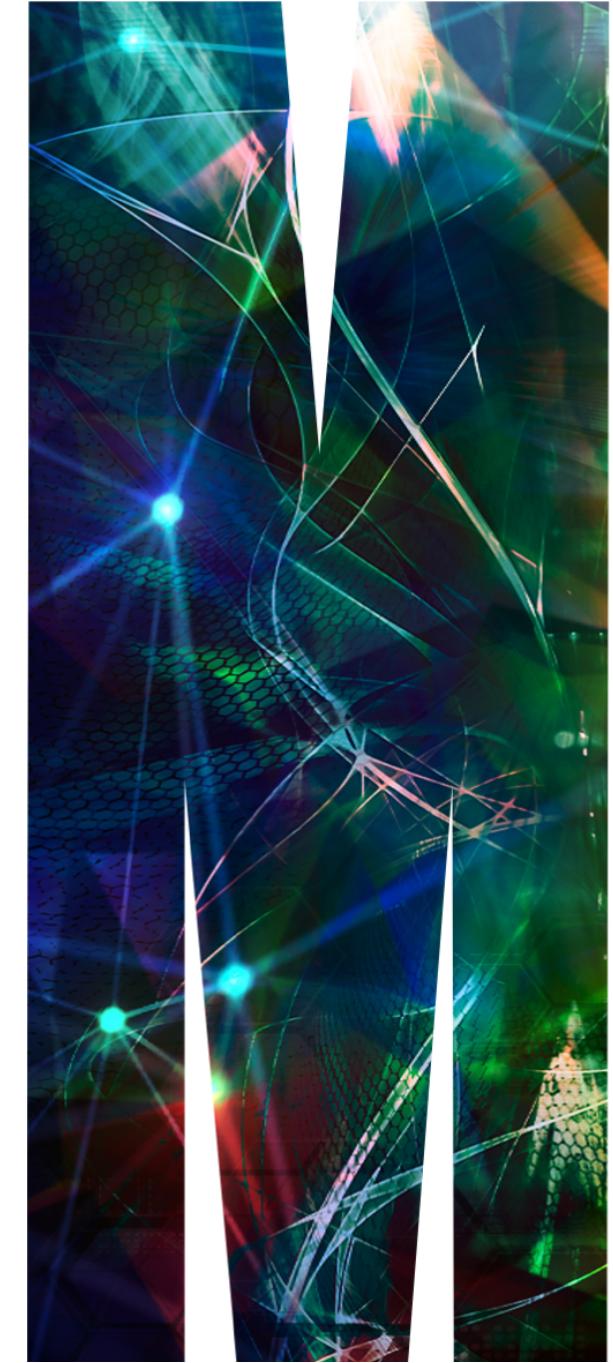


# Department of Econometrics and Business Statistics

Presenter: *Emi Tanaka*

✉ emi.tanaka@monash.edu  @statsgen

㉚ 25 June 2021 @ Australia Data Science Network

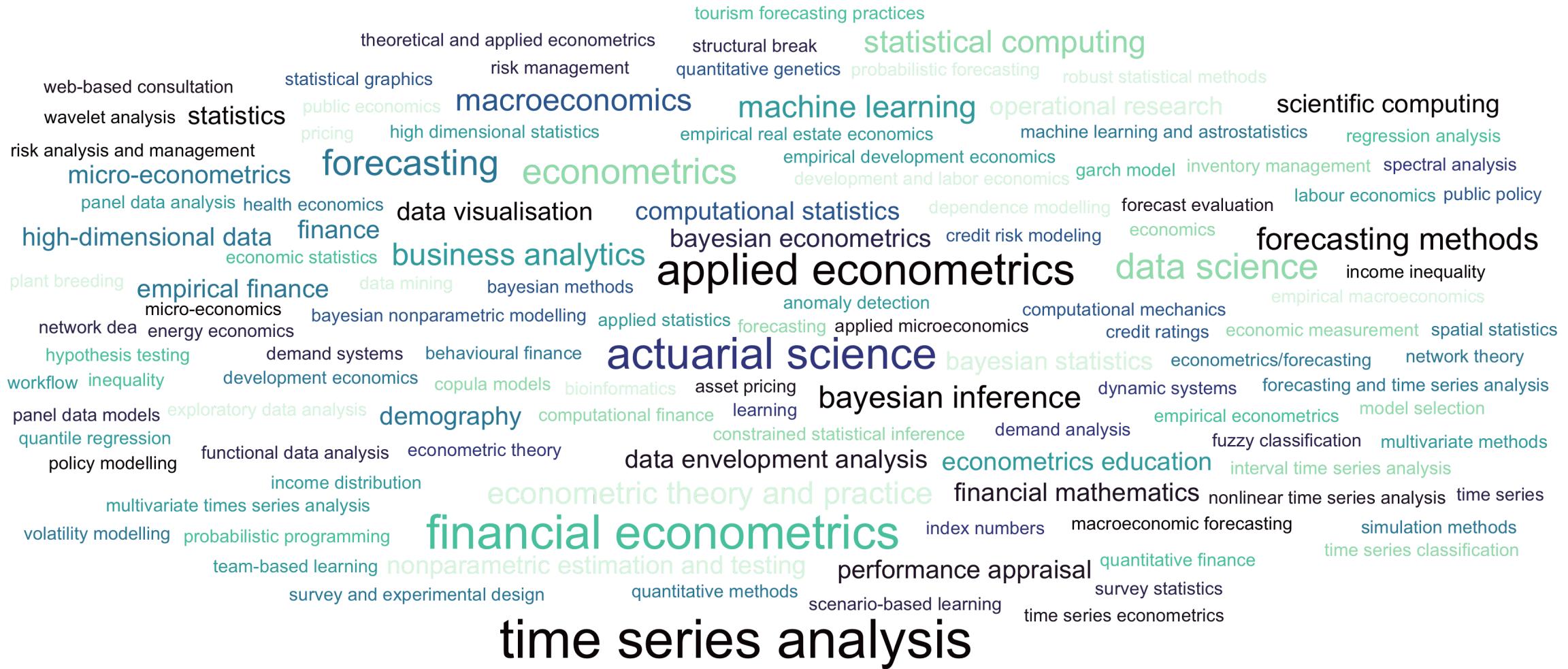


# Department of Econometrics and Business Statistics



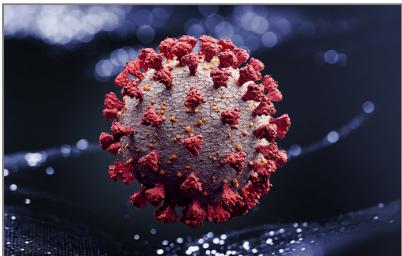
We have about 50 faculty staff who work on **econometrics**, **business analytics** and **actuarial science**, on top of **statistics** and **data science**, for research and teaching.

# Key interest areas



# World-leading Econometrics and Forecasting Unit

Selected projects and areas involving our department staffs



COVID-19



Tourism



Employment



Superannuation



Bayesian  
Prediction



Applied  
econometrics



Econometrics  
education



Financial  
econometrics

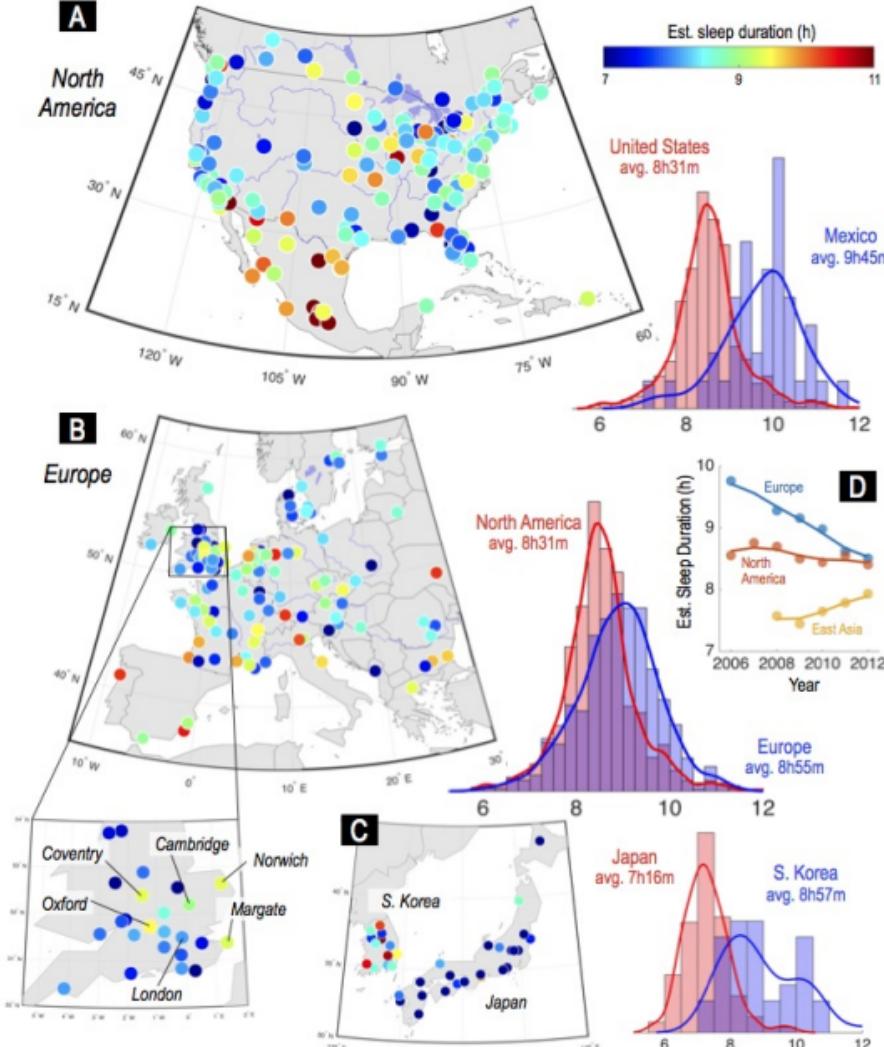


Macroeconomics



Micro-economics

# Spotlight 🔦 Sleeping pattern from internet usage



- Part of **SoDa Labs**
- Social science insights from alternative data, e.g.
  - satellite imagery,
  - digitised textual sources,
  - internet activity and
  - latency, search terms and trends, social media, news, and more.

# Spotlight Policy and health economics



## Equal tax for equal alcohol?

by Xueyan Zhao

Study of beverage types and antisocial and unlawful behaviours reveals cask wine appears to be significantly under-taxed despite its external costs to the society.

## Effects of environmental policies and productivity

by Xueyan Zhao

The OECD environment and production data shows more strict policy in fact in the long run increase productivity.

## Prescription drug use and mental health

by Xueyan Zhao

Mental health problems are driving Australia's increasing misuse of pharmaceutical drugs including painkillers, tranquillizers and steroids, new research has found.

## Mental health: length of stay and psychiatric re-admission

by Yan Meng and Xueyan Zhao

## Private vs public hospital length of stay for hip replacement

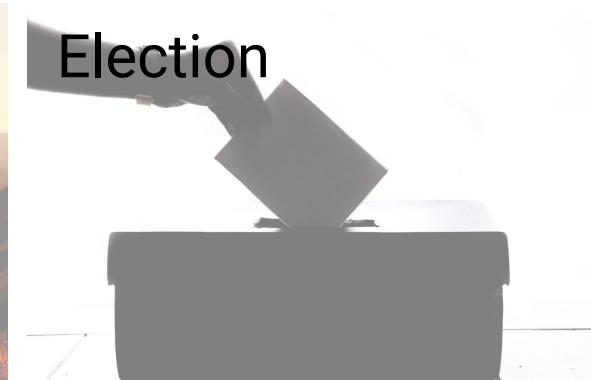
by Yan Meng, Xueyan Zhao, Xibin Zhang and Jiti Gao

Study suggests shorter stay in public hospitals due to pressure from activity-based funding scheme, and longer stay in private system due to potential moral hazard.

## Bushfires, pollution and hospital respiratory admission

by Callum Shaw, Xueyan Zhao and Dianne Cook

# Key insights from domain data analytics



# Software Development

Selected R-packages (and Stan) developed by our department staffs and students

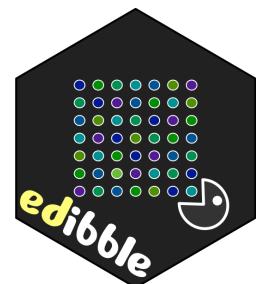


# Spotlight 🔞 Tools with human-centered designs

Tidy time series analysis and forecasting



Grammar of experimental designs

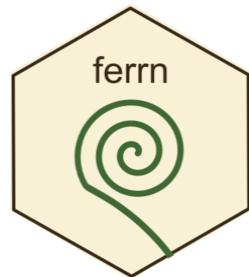


# Spotlight 🔞 Data visualisation

## Visual inference



## High-dimensional data visualisation



## Spatial visualisation



# Department of Econometrics and Business Statistics

🔗 <https://www.monash.edu/business/ebs>

🐦 @MonashEBS

Theoretical foundations & methodology in statistics and econometrics, combined with the development of computational tools and translational research

## SoDa Labs: social science insights from alternative data

🔗 <https://www.monash.edu/business/soda-labs/home>

🐦 @TheRealSodaLabs

Non-Uniform Monash

Business Analytics Team (NUMBAT)

🔗 <https://numbat.space/>

🐦 @numbats\_rise\_up

► Slides at <http://emitanaka.org/slides-ADSN>