

# ANU College of Business and Economics 2022/2023 Research Overview



Australian  
National  
University

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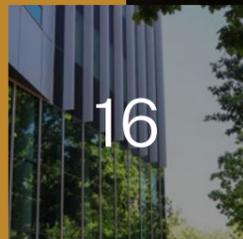
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Scan to read about CBE's research news  
[cbe.anu.edu.au/research](https://cbe.anu.edu.au/research)

# Acknowledgement

The Australian National University (ANU) acknowledges, celebrates and pays our respects to the Ngunnawal and Ngambri people of the Canberra region and to all First Nations Australians on whose traditional lands we meet and work, and whose cultures are among the oldest continuing cultures in human history.

# Welcome

## **Welcome to the 2022/2023 ANU College of Business and Economics (CBE) Research Overview.**

Since our last update, our academics have conducted research on a wide range of pressing issues in business and economics. Their work has advanced knowledge, informed public and private sector practices and, ultimately, translated into societal benefits.

The 2022/2023 CBE Research Overview profiles a small subset of this research. It serves not only as a celebration of our recent research achievements, but as a showcase of our collective research expertise.

Moving forward, we remain committed to using our research expertise to tackle emerging issues in business and economics. Please get in touch if you would like to know how we can help your organisation in this regard.

**Professor Steven Roberts, Dean**

**Professor Emma Schultz,  
Associate Dean (Research)**



# RESEARCH ACTIVITY IN NUMBERS



136

Publications in  
A\*/A ranked  
journals\*



40

Active externally-  
funded research  
projects



298

Research  
events



1,458

Media  
appearances



25

HDR  
completions



42

New academic  
hires

The figures included in this chart refer to the period of time spanning from January 2022 to June 2023.

\*As listed in the Australian Business Deans Council's 2022 Journal Quality List

# New Australian Research Council projects



Dr Francis Hui and Professor Alan Welsh

## Discovery Project – Reliable and accurate statistical solutions for modern, complex data

Francis and Alan are developing novel methods for reliable and accurate statistical modelling of modern, complex correlated and error-prone data sets. These methods will be invaluable in a range of contexts, from protecting endangered marine species to better understanding the relationship between education achievement and financial success.



Dr Yanrong Yang

## Discovery Project – Feature learning for high-dimensional functional time series

Yanrong is developing new statistical theories and methods for analysing high-dimensional functional time series. These tools will have widespread empirical applications, informing advanced manufacturing processes and improving forecasting for mortality data in demography, climate data in environmental science, asset returns in finance and electricity consumption in economics.



Associate Professor Robert Clark

## Linkage Project – Surveillance and sampling to maintain absence of pests and diseases

Robert and colleagues from the ANU College of Health and Medicine and the Australian Department of Agriculture, Fisheries and Forestry are developing statistical and mathematical models that track and report pests and diseases detected within Australia. By making these models accessible via software developed for decision-makers, and generalisable approaches that address rapidly increasing risks, the team will improve national biosecurity surveillance.

# Ongoing Australian Research Council projects



Professor Andrew Wood and Associate Professor Janice Scealy

## Discovery Project – Novel statistical methods for data with non-Euclidean geometric structure

Andrew and Janice are developing new statistical techniques to analyse complex data types found in many areas of science, health, business and technology. These techniques will have a broad range of applications in fields including finance (predicting Australian stock returns), geochemistry (analysing Australian sediment data) and health (modelling electroencephalography data to improve the diagnosis of epilepsy; and developing algorithms for the classification of x-ray tumour image data).



Professor Antje Berndt

## Discovery Project – The impact of COVID-19 economic stimulus measures on corporate stakeholders

Australia's economic response to COVID-19 saw cash injections to companies and bailouts of some insolvent firms. Antje and her project collaborator, Professor Darrell Duffie from Stanford University, will quantify the market value of these government subsidies and how it was shared across corporate stakeholders. Their work will also contribute to the design of financial-stability regimes by developing a world-first dynamic structural model of firm assets that allows for government interventions both prior to and at default. Expected outcomes should provide significant benefits to taxpayers and include a novel public dataset that tracks expected future subsidies and how they are shared by stakeholders, together with crucial cost-benefit analysis tools aimed at assessing, and enhancing public trust in, the effectiveness of emergency economic-relief measures.

# Other externally funded research projects



Associate Professor Alex Richardson

## Land Network Integration Centre (LNIC) Research Project, Department of Defence

Alex supervised ANU student interns as they undertook research on a range of LNIC operations. The research supported Defence to progress work on a broad range of complex problem scenarios, by consulting with relevant personnel to identify opportunities and offer evidence-based solutions that improved integration and efficiency moving forward. It also allowed ANU students to use their research and communication skills to address significant, real-world problems.



Associate Professor Adam Butt, Associate Professor Gaurav Khemka, Associate Professor Geoff Warren, William Lim

## Primer on retirement income strategy design and evaluation

The US Society of Actuaries commissioned Adam, Gaurav, Geoff and William to write a 'primer' on designing and evaluating strategies for generating income during retirement. The primer highlights how income generation strategies vary with retirees' income objectives and, for each objective, describes appropriate approaches to investment and drawdown of funds. It is written for practitioners working for retirement plan providers, investment managers, asset consultants, actuarial organisations and financial planners.

## Research with impact

# CBE RESEARCH BLASTS OFF

Professor Ofer Zwikael's research is helping NASA manage the launch of the Artemis I rocket to Mars.

“ Earned Schedule could be used to build a spaceship or build a road or any other big project. Any large-scale project would benefit from it. ”

Ofer and his co-authors' research on Earned Schedule, a project-management scheduling technique, is being used by NASA to manage the launch of their unmanned trial rocket Artemis I. Part of NASA's Space Launch System (SLS), Artemis I is tasked with the ambitious goal of taking astronauts to Mars.

Presented and validated in the paper titled *Prediction of project outcome: The application of statistical methods to Earned Value management and Earned Schedule performance indexes*, Earned Schedule is an extension to the Earned Value Methodology originally created by the US Department of Defense and used as a project-management tool by organisations around the world.

“Whereas the cost analysis in Earned Value Methodology is effective, we found it was not very accurate for monitoring the schedule of the project, hence the Earned Schedule extension,” says Ofer.

NASA realised the project schedule monitoring limitations of the Earned Value Methodology for mega-projects in the wake of project disruptions triggered by the COVID-19 pandemic, and transitioned to Earned Schedule. This has given NASA the ability to monitor the schedule performance for the greater scale of activities, monitoring points and milestones required for the management of NASA's SLS and rocket launch projects.

While Earned Schedule can be used for monitoring any large-scale, complex project, the benefits to NASA were made particularly clear when they reached out unilaterally to thank Ofer and the team for their work.

Keith Heitzman, the Chief Scheduler for the NASA SLS, expressed his appreciation.

“Earned Schedule helped NASA identify unrealistic contractor schedules and accurately predict completion dates,” he says.

Ofer and the team were understandably pleased by this unsolicited praise.

“The ultimate joy of conducting research is seeing it implemented to make a difference for organisations and society,” says Ofer.



# Research awards

The 2022 CBE Research awards recognised excellence in research, engagement and social impact and training by our academics.



**Dr Francis Hui**

**Prize for Excellence in Research (Level A–C)**

Francis' research has seen major strides in modernising statistical practice in fields such as ecological and environmental statistics, biostatistics, and actuarial science.



**Professor Lin Cui**

**Prize for Excellence in Research (Level D–E)**

Lin's research focuses on international business strategies, and business innovation and entrepreneurship, especially in emerging economy firms.



**Dr David Cheng**

**Prize for Excellence in Research Engagement and Social Impact (Level A–C)**

David's research seeks to help organisations improve the performance, mental health and the retention of valued staff.



**Professor Antje Berndt**

**Prize for Excellence in Research Engagement and Social Impact (Level D–E)**

Antje, in collaboration with Darrel Duffie and Yichao Zhu, developed the Across-the-Curve Credit Spread Index (AXI) – an index that measures the recent average cost of wholesale unsecured debt funding for publicly listed US bank holding companies and commercial banks.



**Associate Professor Tracy Wang**

**Prize for Excellence in Research Training**

Tracy was recognised for her work in supervising students undertaking Higher Degrees in Research within the College.

# Research leadership

CBE academics' editorial board appointments are recognition of their research expertise in the area.



**Associate Professor Idione Meneghel**

**Appointment as co-editor of the *Journal of Mathematical Economics (JME)***

Idione was appointed as a co-editor of JME in January 2022, having served as an associate editor since 2017. Idione's appointment recognised her success as an economic theorist, specifically, her work in game theory, decision theory, auction theory, and the theory of mechanism design. This research appears in top international outlets including *Journal of Economic Theory*, *Theoretical Economics*, and *Econometrica* and includes work undertaken during her time at Yale University's Cowles Foundation for Research in Economics.



**Professor Xin Meng**

**Appointment as editor of the *Journal of Labor Economics***

Meng was appointed as an editor of the *Journal of Labor Economics* in August 2022. Published by the University of Chicago, the *Journal of Labor Economics* is a peak journal in labour economics as well as a leading journal in applied economics. Meng's editorship recognises her research in areas spanning labour economics, development economics, the economics of education, applied microeconomics and economic history, much of which was enabled by funding from the Australian Research Council, AusAID, the Ford Foundation and World Bank.

# Research events

CBE hosted nearly 300 research events in the 18 months preceding June 2023. Each event strengthened the College's relationships with a diverse range of stakeholders, facilitating effective communication of its research outcomes and, ultimately, the adoption of these findings by research end users.



**2022 Goldsmith Lecture**  
What economic theory really says about the role and conduct of economic policy?

**By Professor Joseph Stiglitz**

In the lecture, Nobel Laureate Professor Stiglitz discussed recent advances in microeconomic and macroeconomic theory that are predicated on unrealistic models and assumptions and, therefore, offer less guidance than it would appear.

## 2022



**CBE 3 Minute Thesis (3MT) Competition 2022**

Research School of Accounting student Chen Wang won the 2022 CBE 3MT competition for discussing her thesis, *The invasive use of monitoring technology reduces Working From Home employee wellbeing*.



**Rob Hyndman public lecture**  
Forecasting the future and the future of forecasting

**By Professor Rob Hyndman FAA FASSA**

In his presentation, Professor Hyndman drew upon his 30 years of forecasting experience to explain the conditions needed for predictability, how to measure the uncertainty of any forecasts we make, and how to evaluate whether we are certain enough.



**Shirley Gregor AO**  
Distinguished Lecture

The lecture focused on the future of entrepreneurship and commercialisation. ANU Professor Emerita Shirley Gregor provided opening remarks and Professor Michael Lounsbury delivered the keynote speech. It was followed by a panel discussion with Fiona Hindmarsh (CEO, Significant Early Capital Ventures) and Nick Purtell (Head of Commercialisation, Department of Industry, Science and Resources). CBE's Dr Samira Nazar participated as a moderator.

## 2023



**2023 Goldsmith public lecture**  
Sources of artificial intelligence

**By Professor Thomas J. Sargent**

In the lecture, Nobel Laureate Professor Sargent took the audience on a journey through the history of scientific breakthroughs, discussing how artificial intelligence is taking over human intelligence.



**2023 Fred Gruen public lecture**  
The longevity and budgetary impact of the Australian Pharmaceutical Benefits Scheme

**By Professor Frank Lichtenberg**

In his presentation, Professor Lichtenberg discussed the impact of long-run changes in the drugs provided by the Australian Pharmaceutical Benefits Scheme (PBS) on mortality and hospital utilisation.

# 2022 Conference on Women's Safety and Financial Security

The two-day conference was hosted by the ANU Research School of Finance, Actuarial Studies and Statistics. Associate Professor Phong Ngo was the Chair.

"My hope for this interdisciplinary conference is that by bringing together people who think differently, who are trained differently and who interact differently, and having them find common ground, we can start to make some real progress on the important issues of women's safety and financial security."



## About the event

The Conference brought researchers and policy makers together to explore solutions to intimate partner violence (IPV), with a particular focus on the importance of economic and financial security.

## The presenters

Presenters included keynote speaker Professor Judy Postmus, Dean of the School of Social Work at the University of Maryland, and panel discussion chair Rebecca Glenn, Founder and Chief Executive Officer of the Centre for Women's Economic Safety.



## Themes



Labour market outcomes



Gender inequality



Financial abuse



Legal and political determinants of IPV

## Images

Cover

The Australian National University

Pages 1 and 2

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Pages 3 and 4

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