

# Centre for Data Analytics (CDA) Annual Report 2022

# Centre for Data Analytics (CDA)

#### **Aims**

The University Centre for Data Analytics aims to raise the profile of Bond University in the Data Analytics research space. This will help establish meaningful engagement with organisations, both government and private, which is expected to lead to funding opportunities and research collaborations.

#### Mission statement

The mission of the Centre for Data Analytics is to establish Bond University as a leading research hub, through (i) outreach and research collaboration, (ii) expansion of the quality and quantity of research output, and through (iii) the development of training and technology aimed at strengthening our current research programs and engagement with industry. The focus of our centre is closely aligned with the priorities of the Bond University Strategic Plan.



#### Research strategies

Our centre's mission can be further delineated into the following research strategies. These are to

- Elevate our standing and reach by engaging with academe, business, industry, government, and the community in influential and impactful ways, through research, partnership, and collaboration.
- Developing on our firm foundation of existing research to cultivate our accomplishment in research income through contract research and consultancy work.
- Developing on our firm foundation of existing research to cultivate our success in research output in terms of quality and quantity.
- Grow our strength and capacity through research training, higher degree research students and professional development.
- Develop programs to support our growth in income and research output Contribute to the university's graduate and undergraduate program by involving students in research projects through assistantships and other work arrangements.
- Provide technological solutions through Bloomberg, R and Python training programs.



#### Members – in 2022

Members of the centre have specific data analytics interests in finance, machine learning, energy economics and sustainable development, energy justice, energy poverty, risk management and climate change, amongst others. They have a genuine desire to collaborate and contribute their complimentary skills on a range of innovative big data projects.

The current list of members from multi-discipline includes:

Professor Terry O'Neill – Executive Dean and Director of Centre for Data Analytics

Professor Gulasekaran Rajaguru – Deputy Director of Centre for Data Analytics, Program Director – Actuarial Science, Data Analytics and Economics and Professor of Economics

Professor Steven Stern – Professor of Data Science, Custodian of Duckworth-Lewis-Stern method and member of the ABS Methodology Advisory Committee.

Professor Robert Faff – Professor of Finance and Associate Dean for Research

Professor Kuldeep Kumar – Professor of Statistics

Professor Keith Duncan – Professor of Accounting

Professor Marcus Randall - Associate Dean Student Affairs & Service Quality and Professor of Informatics

Dr. Simone Kelly – Associate Professor of Finance

Dr. Adrian Gepp – Associate Professor of Statistics

Dr. Christopher Bilson – Associate Professor of Finance

Dr. Kevin Fergusson – Associate Professor of Actuarial Science

Dr. Rand Low – Associate Professor of Computational Finance

Dr. Tim Hasso – Assistant Professor of Accounting

Dr. James Todd – Assistant Professor of Data Science

Dr. Nikki Cornwell - Senior Research Fellow

Dr. Alex Acheampong – Assistant Professor of Economics

Dr. Andre Barczak – Assistant Professor of Data Science

Dr. Ahmed Moustafa – Professor of Psychology

Dr. Vernon Coffey– Associate Professor

Dr. Bruce Watt - Head of School, FSD

Prof. Rod Falvey– Honorary Adjunct Professor of Economics

Dr. Michael O, Neill - Honorary Adjunct Associate Professor

Prof. Bruce Vanstone – Honorary Adjunct Professor of Data Science.

**Advisory Board** – Bond Business School Advisory Board.

#### **Team**



Prof. Terry O'Neill – Director and Executive Dean



Prof. Gulasekaran Rajaguru – Deputy Director and Professor of Economics



Prof. Steve Stern – Professor of Data Science. Custodian of Duckworth-Lewis-Stern method



Prof. Kuldeep Kumar – Professor of Statistics



Prof. Robert Faff – Professor of Finance and Associate Dean for Research



Prof. Marcus Randall – Professor of Informatics



Prof. Keith Duncan – Professor of Accounting



Dr. Simone Kelly – Associate Professor of Finance



Dr. Adrian Gepp – Associate Professor of Data Analytics



Dr. Christopher Bilson – Associate Professor of Finance





Dr. Kevin Fergusson – Associate Professor of Actuarial Science

Dr. Rand Low – Associate Professor of Computational Finance

Dr. Alex Acheampong – Assistant Professor of Economics



Dr. Andre Barczak – Assistant Professor of Data Science



Dr. James Todd – Assistant Professor of Data Science



Dr. Tim Hasso – Assistant Professor of Accounting



Dr. Ahmed Moustafa – Professor of Psychology



Dr. Vernon Coffey— Associate Professor



Ms. Nikki Cornwell – Senior Research Assistant



Dr. Michael O'Neill – Honorary Adjunct Associate Professor of Finance



Dr. Bruce Watt – Head of School, FSD



Prof. Rod Falvey – Honorary Adjunct Associate Professor of Economics

#### **Centre objectives and Action Plans**

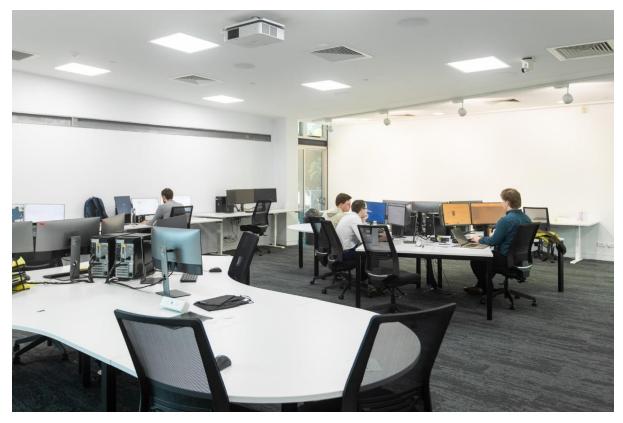


The centre addresses many of the Strategic Objectives set out in the Bond University Research Strategy 2023-2027 both directly, and indirectly.

STRATEGIC OBJECTIVE 1: Conduct targeted research in key areas which is world-class in quality and impact.

Centre Director, Professor Terry O'Neill brings a wealth of knowledge and expertise in the Quantitative space, and further, a wealth of knowledgeable leadership. The centre provides a framework for Professor O'Neill to stimulate a research culture within the specific area of data analytics. Professor Robert Faff joined Bond University as a University Professorial Fellow in 2021. Professor Faff is the Fellow of the Academy of the Social Sciences in Australia in 2021. Professor Steve Stern, custodian of the Duckworth Lewis Stern system for rain-affected cricket matches, further establishes Bond University's credentials in the quantitative space. The centre ensures that grant holders are valued and well supported to achieve the outcome of their grants. The centre provides training and support to enable members to maximize the impact of their research and engage with key stakeholders and end users. It provides support for the development of industry collaborations. The Centre for Data Analytics also a member of the Australian Data Science Network.

Members of the centre are drawn from a number of areas. It is our intention to develop a panel supervision approach for research students, where panels will consist of 3 – 5 joint supervisors from different departments whose members are in the data analytics centre participating in each PhD supervision. This allows PhD students to the full range of knowledge directly available from centre members, as well as helping each centre member better understand each other's core skills, potentially enabling even greater collaboration. The range of Masters and Doctoral dissertation topics are aligned with industry needs.



STRATEGIC OBJECTIVE 2: Build and nurture key partnerships with professions, industry, government, and academia that enhance our reputation and grow our capacity including our ability to undertake impactful research.

The Centre for Data Analytics is established to help Bond University establish itself as a significant player in the Big Data and Analytics research space. Members of the centre have specific data analytics interests in finance, machine learning, risk management and climate change, amongst others.

The centre has conducted four meetings in 2022 to promote research activities (Appendix A). The focus of our meetings is centred around the priorities of the Bond University Strategic Plan 2023-27. The priorities are expected to be achieved through (i) publishing in internationally refereed journals, (ii) present our articles at the international conferences, (iii) promoting research through academic / industry partnership and collaboration, (iv) seeking external grants, and (v) promoting

research through HDR program and alumni. Notably, the Centre for Data Analytics has secured the ARC Discovery Research grant in 2022 as outlined below.

Title: Price Discovery in Equity and Volatility Futures for Trading and Hedging

Participants: Gulasekaran Rajaguru (Lead CI), Steve Stern (CI), Michael O'Neil (PI) and Robert Faff (CI)

Total Funding = \$382,798 (Contribution from ARC: \$254,798.00 and Contribution from Bond University: \$128,000)

#### Summary:

This project aims to develop a multivariate asynchronous technique to analyse the price discovery of movements in equity stock indices, volatility index futures and exchange traded products. This project expects to generate new knowledge in the area of financial econometrics using an innovative mixed frequency sampling approach to establish robust causal inferences. Expected outcomes of the project include enhanced econometric theory and its implementation in applied finance. This should provide significant benefits in the price discovery of the equity index in Australia, including insights that will help Australian funds in hedging and trading volatility.

#### National Interest Test Statement:

Alternative asset classes perform differently over time and superannuation funds use this diversification feature to help manage market uncertainty on behalf of members. However, there is no unique way to execute this responsibility – there are literally thousands of superannuation options available. This project will contribute to the national economy by proposing a novel approach to appropriately manage risk. This strategy involves learning from the observed link between special financial measures and the make-up of asset classes within a superannuation fund. This will allow fund managers to make more informed and superior decisions about the optimal composition of their portfolio. This approach should improve superannuation outcomes, particularly for retirees where unexpected dramatic market downturns can substantially impact retirement income. Put simply, these members will benefit by better avoidance of riskier asset classes. Crucially, the project's state-of-the-art evidence-based findings will be openly shared across the superannuation industry and with regulators.

The strategic priorities are achieved by the members of Centre for Data Analytics through one or more initiatives listed above:

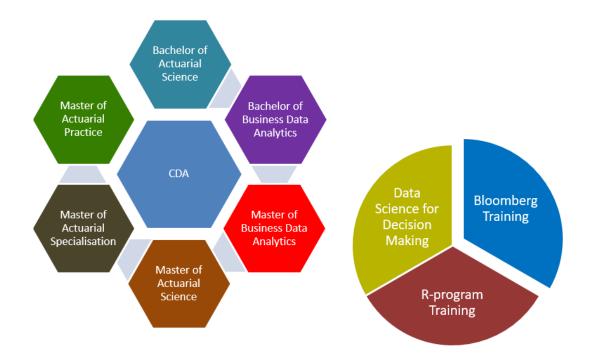
- (i) The centre has achieved its University Research Centre status in 2020.
- (ii) The centre has produced 79 research articles in the form of journal articles / review and are published in internationally referred journals (Attachment 1)

- in 2022 as opposed to 39 in 2021. 75% of the articles are published ABDC ranked A/A\* or Scimago Q1 classification journals.
- (iii) The research output is presented in internationally refereed conferences. The centre has produced multiple conference papers and book chapters in 2022 (Attachment 1). It also provided a platform to perform more collaborative research in the field of data analytics. The centre has gained its international reputation through international conference presentations and comments on the leading statistical journal (Journal of the Royal Statistical Society), See attachment 1. The members also serve as a member of editorial board in multiple leading academic journals. Most importantly, the impact of the research centre is showcased through multiple media publications / interviews.
- (iv) Researchers from the centre has produced multiple academic and industry research partners. Research week presentations also attracted industry partners and created a solid platform towards external grants and consultancies. The research seminars conducted by Research Centre also attracts larger number of researchers in the field and they made significant contribution to our research. The external relationship with industry partners and government includes Australian Research Council, AFAANZ, Informed365, etc.
- (v) The centre has secured significant external research grants including an ARC Discovery Grant (see Attachment 2).
- (vi) Members of research centre are actively involved in HDR research supervision (see Attachment 3).
- (vii) CDA has joined the Australian Data Science Network (ADSN). The ADSN is administered by the QUT Centre for Data Science. The aim of the Australian Data Science Network (ADSN) is to connect the concentrations of expertise in data science across Australia, to improve communication, encourage collaboration, expand opportunities, and promote our individual and collective capabilities.
- (viii) Prof. Robert Faff was appointed as a Fellow of the Academy of the Social Sciences in Australia.
- (ix) Professor Robert Faff has initiated a pre-registered journal publication to Pacific Basin Finance Journal. InSPiR2eS Global pitching research competition number of entries for the completion across the globe has increased significantly. Pitching competition conducted by the Associate Dean Prof. Robert Faff from the CDA was successful. Prof. Faff delivered multiple keynotes at various conferences. Prof. Faff has launged a Microcredential course on Pitching.
- (x) The research week event conducted by the CDA was successful and it attracted both academic and industry partners. The research week event was a panel discussion Chaired by Professor Steven Stern with a panel of Dr.

Adrian Gepp, Dr. Belinda Barton and Dr. Lucy Ward on Data and the Future of Business.

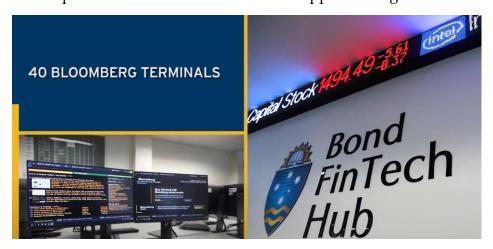


- (ix) Cooperative Research Centres (CRC) Grants provide funding for medium to long-term, industry-led research collaborations. Corporate Research Centre Bid (CRC bid) multiple partners from both industry and academic. It aims to solve industry identified problems and improve the competitiveness, productivity and sustainability of Australian industries. It includes an industry-focused education and training program, including a PhD program that builds capability and capacity. Bond University is participating on the CRC bid. It will have the time span of 10 years with a total grant of about \$100 million. The focus will be on data science, efficiency, governance, and behavioural science. CDA has a skill set which are relevant for this grant. It will provide fundings for PhD students. If it is successful it will increase research and development (R&D) capacity in small to medium enterprises (SMEs).
- (x) CDA brings its research expertise into the class room by offering multiple undergraduate, postgraduate and other micro-credential courses.



#### Infrastructure

The members have unparalleled access to the Bond FinTech Hub. Featuring two industry-standard trading facilities and 40 Bloomberg terminals – the most in Australia – the Bond FinTech Hub provides every Bond Business School student with 24-hour access to Bloomberg's live financial market data. CDA has a subscription to DataStream database to support strong research culture.



Bloomberg terminals are the world standard for accounting and finance professionals, allowing students to get hands-on experience on the tools before entering the workforce. Students can execute deals, manage portfolios and trade securities based on real market conditions.

The Bond FinTech Hub also has a dedicated supervisor who can provide training for Bloomberg certification and [R] programming software.

CDA is also a member of the Queensland Cyber Infrastructure Foundation (QCIF), which provides the high-performance services, infrastructure and support required to achieve excellence in computation and data-driven collaborative research and its application in industry.

DataStream is available at the CDA, which was funded by the university infrastructure grant in 2022.

#### Outcomes

The table below reports each research strategy within the Centre's mission statement and provides both an indicative target and means by which that target will be achieved (approach/metric).

Research Strategy	Approach/metric				
I. Outreach and resea	rch collaboration				
a) Elevate our standing and reach by engaging with academe, business, industry, government, and the community i influential and impactful ways, through research partnership, and collaboration.	n n,				
b) Cultivate our accomplishment in research income through contract research and consultancy work	Growth in research grants and consultancy income				
II. Expansion of the q	uality and quantity of research output				
Building on our existing research base to expand	Growth in research outputs through publishing in high quality journals				

research programs	ning and technology aimed at strengthening our current
a) Grow our strength and capacity through research training, higher degree research students and professional development	<ul> <li>Growth in HDR students</li> <li>Growth in participation in HDR training program such as coursework and workshops Increased involvement in Research Seminar and Conference presentations</li> </ul>
b) Develop programs to support our growth in income and research output	Regularly Review and Develop programs to meet market demand to increase income and quality research output
c) Contribute to the university's graduate and undergraduate program by involving students in research projects through assistantships and other work arrangements	<ul> <li>Growth in engagement with research partners</li> <li>Growth in engagement with government and industries</li> <li>Increased involvement in supervision of research projects</li> <li>Growth in work integrated learning activities Growth in internships</li> </ul>
d) Provide technological solution through Bloomberg, R and Python training programs	Growth in Bloomberg training program participation     Growth in participation in R programming training sessions

# **Appendix A: Meeting Minutes**

### Meeting 1: Centre for Data Analytics

Minutes of meeting 16 Feb 2022

Present: Professor Robert Faff, Professor Kuldeep Kumar, Professor Steven Stern, Professor Keith Duncan, Dr Gulasekaran Rajaguru, Dr. Adrian Gepp, Dr Christopher Bilson, Dr Simone Kelly, Dr. Tim Hasso, Dr. Rand Low, Dr. Kevin Fergusson, Dr. James Todd, Ms. Nikki Cornwell.

- 1. Apologizes: Professor Terry O'Neill and Dr Marcus Randall.
- 2. Minutes of the last meeting were reviewed and accepted.
- 3. Update since last meeting
  - a. Membership

New Member - None

Steve has recommended Associate Professor Vernon Coffey to be invited to CDA as a new member. Dr. Vernon has a track record of conducting collaborative research with BBS staff. He is also jointly supervising HDR students with the members of the CDA. Sekar will send an official invitation to invite him to be a member of the CDA before the next meeting.

Simone has initiated a discussion on the possibility of including Dr. Evan Matthews, Senior Teaching Fellow (Finance) as a member of the CDA. The committee has decided to defer the decision to the future meetings.

- b. Chair has acknowledged the achievement of Prof. Robert Faff who was appointed as a Fellow of the Academy of the Social Sciences in Australia.
- 4. InSPiR2eS Global pitching research competition number of entries for the completion across the globe has increased significantly.
- 5. Research activities

Members are expected to update their PURE profile. Adrian has asked if the grant related update to be sent to the Chair by email. The grant related information is still not available for public access and the members are expected to send the details to Sekar by email.

- a. Publications Attachment 1.
- b. Conference/Seminar/Presentations Attachment 1.
- c. Research Grant Attachment 2.Adrian and Kuldeep have applied for the innovation connection grant.

Rand is expected to apply for a innovation connection grant this year.

d. Visitors

Michael O'Neill – visited Sekar and Christopher Bilson. Professor Allan Hodgson - Emeritus Professor, UQ – visited Prof. Faff.

6. Infrastructure – Bond is a member of Queensland Cyber Infrastructure Foundation (QCIF). Flexible cloud computing, however, cloud storage is limited. Members are encouraged to use the cloud computing. Adrian and James will update the details about the upcoming training on a regular basis. ORS will update the relevant training videos in their website. James attends fortnightly meeting with QCIF. James to update the user statistics in the next meeting.

Sekar has raised a question on how flexible to install a single user license in the cloud system. James to update those details in the next meeting.

Adrian has confirmed that QCIF is available for the use of the Adjunct staff as well.

Sekar and Christopher Bilson have applied for the infrastructure grant for the DataStream terminals.

#### 7. Other Business

- a. Interactive web analytics page
   Rand Low has outlined the usefulness of the interactive web analytics
   page. The key outcomes are
  - Showcasing research/data analytics/predictive modelling performed by Bond University researchers (academics & students)
  - Teaching our students with a data science background how they can create an interactive web-portfolio.

Members has raised some potential huddles during the meeting

- Sekar and Adrian have raised concerns about the research & copyright concerns with industry partners.
- Sekar and Adrian have reiterated that it requires approvals from Bond University central for each update. ORS and library have to act as gate keeper to ensure the truthfulness of content.
- Steve Stern and Sekar have raised the concerned about the ongoing costs and maintenance. Who will maintain in the long run? Who will fund

this on a regular basis? Keith suggests engaging admin or even PhD students on a part-time basis.

- Steve further reiterated that initial interest in the project which eventually "dies"
- Simone suggested to investigate how Tactical Research Unit has done their website.
- b. Emma updated the joint PhD arrangement with the Bond University and the overseas universities.

Next meeting in 2-3 months.

# Meeting 2: Centre for Data Analytics

Minutes of meeting 07 Jun 2022

Present: Professor Terry O'Neill, Professor Steven Stern, Professor Keith Duncan, Dr Gulasekaran Rajaguru, Dr. Adrian Gepp, Dr Christopher Bilson, Dr Simone Kelly, Dr. Tim Hasso, Dr. Rand Low, Dr. Kevin Fergusson, Dr. James Todd, Ms. Nikki Cornwell.

- 1. Apologizes: Professor Robert Faff, Professor Kuldeep Kumar, Dr. Adrian Gepp, Dr. Vernon Coffey and Dr. Marcus Randall.
- 2. Minutes of the last meeting were reviewed and accepted.
- 3. Update since last meeting Membership

New Member - Dr. Vernon Coffey

Steve has recommended to invite Professor Ahmed Moustafa and Associate Professor Bruce Watt to CDA as a new member.

Simone has initiated a discussion on the possibility of including Dr. Evan Matthews, Senior Teaching Fellow (Finance) as a member of the CDA. Terry and Sekar will finalise the membership prior to next meeting.

Members are expected to update the status of their external membership under the activities in PURE.

Steve Stern – member of the ABS methodology committee.

Rand Low to update his external membership details in PURE under activities.

#### 4. Research activities

Members are expected to update their PURE profile.

- e. Publications Attachment 1.
- f. Research Grant Attachment 2
- g. Conference/Seminar/Presentations Attachment 1.
- h. Visitors

Michael O'Neill – visited Sekar and Christopher Bilson.

Professor Allan Hodgson - Emeritus Professor, UQ - visited Prof. Faff.

5. Infrastructure – DataStream is available at the CDA. The username and password are available from Sekar.

Access to the resource room in BBS are restricted. The keys can be collected from Sekar.

QCIF update from James Todd – currently 5 users have signed-up to use QCIF. It requires a permission to install a single user licence in QCIF. Members may contact James about training and upcoming events.

- 6. Other Business
- a. Kings College and Office of Future Students contacted Simone, Steve and Rand to conduct small courses and microcredential courses with a weight of 2 credit points. These courses are expected to be conducted by BBS as a part of the year 12 student experience. Rand, Simone and Steve will discuss further as a subgroup to prioritise the list of short courses to serve the purpose.
- b. Research Week (11/10/2022) In addition to poster session, we may conduct industry / academic presentations or a panel discussion. Members have proposed few ideas such as cyber security, Crypto currency, artificial intelligence, interactive website. Members are expected to send their research week ideas to Sekar. Terry and Sekar will finalise the program.

Next meeting in 2-3 months.

## **Meeting 3: Centre for Data Analytics**

Minutes of meeting 12 July 2022

Present: Professor Terry O'Neill, Professor Steven Stern, Robert Faff, Professor Gulasekaran Rajaguru, Professor Kuldeep Kumar, Professor Keith Duncan, Professor Marcus Randall, Dr. Adrian Gepp, Dr. Christopher Bilson, Dr Simone Kelly, Dr. Tim Hasso, Dr. Rand Low, Dr. James Todd, Dr. Alex Acheampong, Dr. Vernon Coffey, Dr. Michael O'Neill, Ms. Nikki Cornwell, Ms. Emma Hunt.

Apologizes: Dr. Kevin Fergusson

- 1. Acknowledgement of Country
- 2. Minutes of the last meeting were reviewed and accepted.
- 3. Update since last meeting

#### <u>Membership</u>

New Members - Dr. Vernon Coffey & Dr. Alex Acheampong

Steve has recommended to invite Professor Ahmed Moustafa and Associate Professor Bruce Watt to CDA as a new member. They will be attending from the next meeting.

#### 4. Research activities

Members are expected to update their PURE profile.

i. Publications - Attachment 1.Chair has requested all new members to update their publication in PURE.

#### ii. Research Grant - Attachment 2

Members to update the grant activities directly to Chair to be included in the report.

Adrian and Kuldeep – inovatiopn connection grant - \$100,000 (from Australian Government: A\$50,000.00, Informed365: A\$50,000.00)

Hasso, T. & Agliata, N. Big Data Analytics in SMEs and Firm Performance.

Accounting & Finance Association of Australia and New Zealand:

A\$5,800.00.

Hu, Ben and Duncan, K. AFAANZ Research Grants 2022 - \$3000.

- iii. Conference/Seminar/Presentations Attachment 1.
- iv. Visitors

Michael O'Neill – visited Sekar and Christopher Bilson. Michael has attended the CDA meeting.

Edwards, Graeme - Teaching a newly developed course Cyber and Fraud Threats in Organisations.

#### 5.

# a. <u>Update from the Director of the CDA – Executive Dean Professor Terry</u> O'Neill.

Corporate Research Centre Bid (CRC bid) – multiple partners from both industry and academic. Bond University is participating on the CRC bid. It will have the time span of 10 years with a total grant of about \$100 million. The focus will be on data science, efficiency, governance, and behavioural science. CDA has a skill set which are relevant for this grant. It will provide fundings for PhD students.

#### b. <u>Update from ADR: Professor Robert Faff</u>

Opportunity for pre-registered study on Pacific Basin Finance Journal – for example the innovative idea on ManyLabs connecting research centres. AJM will also be willing to sponsor pre-registered study on a policy relevant area. CDA has overlap on this and it will have an opportunity for the CDA members to be able to publish in these journals.

#### c. Update from HDR Director: Dr. Adrian Gepp

Internship arrangement for PhD students – it gives an opportunity for HDR students to work with companies (domestic or international) for 60 days. It is not mandatory for all HDR students.

Two recent graduates from the CDA – Dr. Robert Wrathall and Dr. Tom Aspinall.

#### 6. Infrastructure

QCIF update from James Todd – currently 5 users have signed-up to use QCIF. Members may contact James about training and upcoming events.

#### 7. Other Business

None

Next meeting in 2-3 months.

# Meeting 4: Centre for Data Analytics

Minutes of meeting 23 November 2022

Present: Professor Terry O'Neill, Professor Steven Stern, Professor Robert Faff, Professor Gulasekaran Rajaguru, Professor Keith Duncan, Professor Marcus Randall, Dr. Adrian Gepp, Dr Simone Kelly, Dr. Tim Hasso, Dr. Rand Low, Dr. Vernon Coffey, Dr. Andre Barczak, Dr. Michael O'Neill, Ms. Nikki Cornwell, Ms. Emma Hunt.

Apologizes: Professor Kuldeep Kumar, Dr. Kevin Fergusson, Dr. Christopher Bilson, Dr. James Todd, Dr. Alex Acheampong, Dr. Bruce Watt, Dr. Ahmed Moustafa.

- 1. Acknowledgement of Country
- 2. Minutes of the last meeting were reviewed and accepted.
- 3. Update since last meeting

#### **Membership**

New Member - Dr. Andre Barczak

<u>Update from the Chair</u>: Research Week event was successful. We had 134 attendees. It was acknowledged in the University Research Committee Meeting that CDA event attracted more than others and it was a industry relevant topic. Special thanks to Prof. Steve Stern, Dr. Adrian Gepp, Dr. Belinda Barton and Ms. Lucy Ward. Poster session was successful. Thanks to Emma for organising BBS Research week event. The research week event has attracted two collaborative works with industry.

Dr. Adrian Gepp received Vice Chancellor Quality Award for Supervision, congratulations.

#### 4. Research activities

Members are expected to update their PURE profile.

a. Publications - Attachment 1.Chair has requested all new members to update their publication in PURE.

#### b. Research Grant – Attachment 2

Members to update the grant activities directly to Chair to be included in the report.

Dr. Adrian Gepp and Dr. James Todd - ARC Industrial Transformation Training Centre application- Lead by QUT.

CRC – Work in progress.

ARC Discovery will be announced soon – CDA has two applications: one lead by Marcus and another one by Sekar.

Alex will be applying for DECRA.

#### c. Conference/Seminar/Presentations - Attachment 1.

Prof. Steve Stern – ABS methodology committee meeting as a discussant

Dr. Simone Kelly – Interviewed by ABC about Optus.

Dr. Tim Hasso – Organiser for Asia Pacific Conference in 2023

#### d. Visitors

Michael O'Neill – visited Sekar and Christopher Bilson. Michael has attended the CDA meeting.

Edwards, Graeme - Teaching a newly developed course Cyber and Fraud Threats in Organisations.

PURE profile for Honorary members is not shown.

Prof. Tom Smith expected to visit next year as a mentor.

5.

#### a. <u>Update from ADR: Professor Robert Faff</u>

Multiple keynote by Prof. Faff at various conferences.

Micro-credential course on Pitching is launched.

Opportunity for pre-registered study on Pacific Basin Finance Journal

- conditional acceptance of the paper lead by Nikki Cornwell inaugural pre-publishing report
- there are 12 pre-registered report expected from BBS

# b. <u>Update from the Director of the CDA – Executive Dean Professor Terry</u> O'Neill.

Corporate Research Centre Bid (CRC bid) – multiple partners from both industry and academic. Bond University is participating on the CRC bid. It will have the time span of 10 years with a total grant of about \$100 million. The focus will be on data science, efficiency, governance, and behavioural science. CDA has a skill set which are relevant for this grant. It will provide fundings for PhD students.

### c. Update from HDR Director: Dr. Adrian Gepp

HDR progress report being finalised.

Likely to move towards two examiners instead of three for the PhD examination.

Short version of FULT will be available for HDR students from May 2023 – however other faculties do not have the requirement for HDR student to complete FULT.

#### 6. Infrastructure

CDA has a dedicated waiting area for students to wait for consultation.

CDA teaching space will be likely to move the Business Innovation Hub. The current teaching space will be allocated to HDR students. The final plan will be updated in the next meeting.

#### **QCIF**

- update from James Todd currently 5 users have signed-up to use QCIF.
- Members may contact James about training and upcoming events.
- Nilkki received extension.

#### 7. Other Business

Dr. Rand Low – Green Financing, Blockchain – open for collaboration Prof. Terry ONeill – might require Cyber Security Taskforce in future.

Next meeting in 2-3 months.

#### Attachment 1

#### **Attachment 1 – Research Output 2022**

#### (A) Journal Articles

Petvises, S., Tran, V., Hey, Y-Y., Talaulikar, D., **O'Neill, T. J.,** Tan, J. & O'Neill, H. C., 31 May 2022, (E-pub ahead of print) Extramedullary hematopoiesis: mesenchymal stromal cells from spleen provide an in vitro niche for myelopoiesis. In: In Vitro Cellular and Developmental Biology - Animal. 11 p., s11626-022-00693-8

Zelenyuk, N. & Faff, R., 30 Mar 2022, Effects of incentive pay on systemic risk: evidence from CEO compensation and CoVar. (E-pub ahead of print) In: Empirical Economics.

Malik, I. A. & **Faff**, **R.**, Apr 2022, Industry market reaction to natural disasters: do firm characteristics and disaster magnitude matter? In: Natural Hazards. 111, 3, p. 2963-2994 32 p.

Chen, J., Cai, C. X., **Faff, R.** & Shin, Y., Jun 2022, Nonlinear limits to arbitrage In: Journal of Futures Markets. 42, 6, p. 1084-1113 30 p.

**Faff, R.,** 12 Aug 2022, PBFJ Editorial ... Engaging with responsible science. "OPEN FOR BUSINESS" – Launching the PBFJ pre-registration publication initiative (E-pub ahead of print) In: Pacific Basin Finance Journal. 101837.

Wang, Q., Faff, R. & Zhu, M., May 2022, Realized moments and the cross-sectional stock returns around earnings announcements In: International Review of Economics and Finance. 79, p. 408-427 20 p.

Im, H. J., Faff, R. & Ha, C. Y., Dec 2022, Uncertainty, investment spikes, and corporate leverage adjustments, In: Journal of Banking and Finance. 145, 106649.

Liu, M., Chan, K. F. & **Faff**, **R.**, May 2022, What can we learn from firm-level jump-induced tail risk around earnings announcements? In: Journal of Banking and Finance. 138, 106409.

Guo, S., Yu, X. & **Faff, R.,** 28 Sep 2022, When Investors Can Talk to Firms, Is It a Meaningful Conversation? Evidence from Investor Postings on Interactive Platforms

(E-pub ahead of print) In: European Accounting Review.

- Wang, Q., Faff, R. & Zhu, M., 11 May 2022, Informational content of options around analyst recommendations. In: International Journal of Managerial Finance. 18, 3, p. 445-465 21 p.
- **Acheampong, A. O.,** Dzator, J. & Amponsah, M., 2022, Analyzing the role of economic globalization in achieving carbon neutrality in Australia In: International Journal of Sustainable Development and World Ecology. 29, 6, p. 559-578 20 p.
- Appiah-Otoo, I., Song, N., **Acheampong, A. O**. & Yao, X., Feb 2022, Crowdfunding and renewable energy development: What does the data say? In: International Journal of Energy Research. 46, 2, p. 1837-1852 16 p.
- **Acheampong, A. O.,** Opoku, E. E. O. & Dzator, J., May 2022, Does democracy really improve environmental quality? Empirical contribution to the environmental politics debate, In: Energy Economics. 109, 105942.
- Opoku, E. E. O., **Acheampong, A. O.**, Dzator, J. & Kufuor, N. K., 28 Apr 2022, Does environmental sustainability attract foreign investment? Evidence from developing countries (E-pub ahead of print) In: Business Strategy and the Environment.
- Aluko, O. A., Opoku, E. E. O. & **Acheampong, A. O.**, 3 Oct 2022, Economic complexity and environmental degradation: Evidence from OECD countries (Epub ahead of print) In: Business Strategy and the Environment.
- **Acheampong, A. O.**, Shahbaz, M., Dzator, J. & Jiao, Z., Oct 2022, Effects of income inequality and governance on energy poverty alleviation: Implications for sustainable development policy In: Utilities Policy. 78, 101403.
- Acheampong, A. O., Opoku, E. E. O., Dzator, J. & Kufuor, N. K., Jul 2022, Enhancing human development in developing regions: Do ICT and transport infrastructure matter? In: Technological Forecasting and Social Change. 180, 121725.
- Appiah-Otoo, I., **Acheampong, A. O.,** Song, N., Obeng, C. K. & Appiah, I. K., 2022, Foreign aid—Economic Growth Nexus in Africa: Does Financial Development Matter? In: International Economic Journal. 36, 3, p. 418-444 27 p.
- Adebayo, T. S. & **Acheampong**, **A. O.**, Feb 2022Modelling the globalization-CO2 emission nexus in Australia: evidence from quantile-on-quantile approach, In: Environmental Science and Pollution Research. 29, 7, p. 9867-9882 16 p.

- Dzator, J., **Acheampong, A. O.**, Dzator, M., Paolucci, F., Yawe, B. L., Asmah, E. E., Andoh, F. K., Kabagenyi, A. & Gillespie, J., Jun 2022, Policy Stringency, Handwashing and COVID-19 cases: Evidence from Global dataset In: Health Policy And Technology. 11, 2, 100574.
- Fakhar, H. A., Ahmed, Z., **Acheampong, A. O**. & Nathaniel, S. P., 15 Jan 2023, Renewable energy, nonrenewable energy, and environmental quality nexus: An investigation of the N-shaped Environmental Kuznets Curve based on six environmental indicators, In: Energy. 263, 125660.
- **Acheampong, A. O.**, Aug 2022, The impact of de facto globalization on carbon emissions: Evidence from Ghana, In: International Economics. 170, p. 156-173 18 p.
- Appiah-Otoo, I., **Acheampong, A. O.**, Song, N. & Chen, X., 15 Aug 2022, The impact of information and communication technology (ICT) on carbon dioxide emissions: Evidence from heterogeneous ICT countries In: Energy and Environment.
- **Acheampong, A. O.,** Opoku, E. E. O. & Dogah, K. E., Jan 2023, The political economy of energy transition: The role of globalization and governance in the adoption of clean cooking fuels and technologies In: Technological Forecasting and Social Change. 186, Part B, 122156.
- **Acheampong, A. O.,** Dzator, J., Dzator, M. & Salim, R., Sep 2022, Unveiling the effect of transport infrastructure and technological innovation on economic growth, energy consumption and CO2 emissions In: Technological Forecasting and Social Change. 182, 121843.
- **Bilson, C. M.**, Brailsford, T. J. & **Rajaguru**, **G.**, Mar 2022, Covered interest rate parity deviations in the Asia-Pacific. In: Journal of International Financial Markets, Institutions and Money. 77, 101524.
- Williams, B. & **Rajaguru**, **G**., Feb 2022, The evolution of bank revenue and risk in the Asia-Pacific Region. In: Pacific Basin Finance Journal. 71, p. 1-60 60 p., 101693.
- **Todd, J., Gepp, A., Stern, S. & Vanstone, B. J.**, May 2022, Improving decision making in the management of hospital readmissions using modern survival analysis techniques. In: Decision Support Systems. 156, 113747.
- Cornwell, N., Bilson, C. M., Gepp, A., Stern, S. & Vanstone, B. J., 27 Feb 2022, The Role of Data Analytics within Operational Risk Management: A Systematic Review from the Financial Services and Energy Sectors. (E-pub ahead of print) In: Journal of the Operational Research Society.

Cornwell, N., Bilson, C. M., Gepp, A., Stern, S. & Vanstone, B. J., 2 Dec 2022, Modernising operational risk management in financial institutions via data-driven causal factors analysis: A pre-registered report (E-pub ahead of print) In: Pacific Basin Finance Journal. 101906.

**Hasso, T.,** Müller, D., Pelster, M. & Warkulat, S., Mar 2022, Who participated in the GameStop frenzy? Evidence from brokerage accounts. In: Finance Research Letters. 45, 102140.

Barbera, F., **Hasso**, **T**. & Schwarz, T., 16 Nov 2022, Family governance and firm performance: exploring the intermediate effects of family functioning and competitive advantage (E-pub ahead of print) In: Journal of Family Business Management.

Mutschmann, M., **Hasso**, **T.** & Pelster, M., Dec 2022, Dark Triad Managerial Personality and Financial Reporting Manipulation. In: Journal of Business Ethics. 181, 3, p. 763-788 26 p.

**Fergusson, K. J.** & Platen, E., 28 Jul 2022, Less-expensive long-term annuities linked to mortality, cash and equity (E-pub ahead of print) In: Annals of Actuarial Science.

**Randall, M.,** Lewis, A., Stewart-Koster, B., Anh, N. D., Burford, M., Condon, J., Van Qui, N., Huu Hiep, L., Van Bay, D., Van Sang, N. & Sammut, J., 9 Feb 2022, A Bayesian belief data mining approach applied to rice and shrimp aquaculture. In: PLoS One. 17, 2, e0262402.

**Randall, M.**, Montgomery, J. & Lewis, A., Jan 2022, Robust temporal optimisation for a crop planning problem under climate change uncertainty. In: Operations Research Perspectives. 9, 100219.

Tonkin, I., **Gepp, A.**, Harris, G. & **Vanstone**, **B. J.**, 27 Sep 2022, Adapting Deep Learning Models between Regional Markets (E-pub ahead of print) In: Neural Computing and Applications.

Wallis, M., **Kumar, K. & Gepp, A.**, May 2022, Credit Rating Forecasting Using Machine Learning Techniques, Research Anthology on Machine Learning Techniques, Methods, and Applications. IGI Global, p. 734-752 19 p.

Novykov, V., **Bilson, C. M., Gepp,** A., Harris, G. & **Vanstone, B. J.**, 1 Oct 2022, Empirical validation of ELM trained neural networks for financial modelling (E-pub ahead of print) In: Neural Computing and Applications.

Rad, H., Low, R., Miffre, J. & Faff, R. W., 11 May 2022, The strategic allocation to style-integrated portfolios of commodity futures, (E-pub ahead of print) In: Journal of Commodity Markets. 100259.

**Low, R.,** Southam, C. & Winkler, M., 9 Aug 2022, Coinorb: An Initial Coin Offering to Launch a Cryptocurrency Derivatives Exchange, Ivey Publishing [Case Studies], W29722 7 p.

Thompson, J-L. M., West, D. W. D., Doering, T. M., Budiono, B. P., Lessard, S. J., Koch, L. G., Britton, S. L., Byrne, N. M., Brown, M. A., Ashton, K. J. & Coffey, V. G., 13 Jan 2022, Effect of short-term hindlimb immobilization on skeletal muscle atrophy and the transcriptome in a low compared with high responder to endurance training model. In: PLoS One. 17, 1, 21 p., e0261723.

Wijekulasuriya, G. A., **Coffey, V. G.,** Badham, L., O'Connor, F., Sharma, A. P. & Cox, G. R., Jun 2022, Effect of Acetaminophen on Endurance Cycling Performance in Trained Triathletes in Hot and Humid Conditions. In: International Journal of Sports Physiology and Performance. 17, 6, p. 917-925 9 p.

O'Connor, F., Doering, T. M., Minett, G. M., Reaburn, P. R. J., Bartlett, J. & **Coffey, V. G.,** 1 Jun 2022, Effect of divergent solar radiation exposure with outdoor versus indoor training in the heat: Implications for performance. In: Journal of Strength and Conditioning Research. 36, 6, p. 1622-1628 7 p.

Stapleton, P., Batson, L. & Watt, B. D., 2022, Factor structure for the Food Cravings Inventory in an Australian sample, In: Australian Psychologist. 57, 1, p. 48-56 9 p.

Phillips, J. R., Matar, E., Ehgoetz Martens, K. A., **Moustafa, A. A.**, Halliday, G. M. & Lewis, S. J. G., Jul 2022, An Adaptive Measure of Visuospatial Impairment in Dementia with Lewy Bodies, In: Movement Disorders Clinical Practice. 9, 5, p. 619-627 9 p.

Khalil, R. & **Moustafa**, A. A., Jun 2022, A neurocomputational model of creative processes, In: Neuroscience and Biobehavioral Reviews. 137, 104656.

Faghihi, F., Cai, S. & **Moustafa**, **A. A.**, Aug 2022, A neuroscience-inspired spiking neural network for EEG-based auditory spatial attention detection In: Neural Networks. 152, p. 555-565 11 p.

Faghihi, F., Alashwal, H. & Moustafa, A. A., 24 Feb 2022, A Synaptic Pruning-Based Spiking Neural Network for Hand-Written Digits Classification In: Frontiers in Artificial Intelligence. 5, 680165.

Frydecka, D., Piotrowski, P., Bielawski, T., Pawlak, E., Kłosińska, E., Krefft, M., Al Noaimy, K., Rymaszewska, J., **Moustafa, A. A.**, Drapała, J. & Misiak, B., Jan 2022, Confirmation Bias in the Course of Instructed Reinforcement Learning in Schizophrenia-Spectrum Disorders In: Brain Sciences. 12, 1, 90.

Valikhani, A., Mokaberian, M., Rahmati Kankat, L. & **Moustafa**, A. A., Aug 2022, Dimensional investigation of individual differences in personality disorder traits based on the three-dimensional model of personality self-regulation In: Current Psychology. 41, 8, p. 5163-5175 13 p.

Gupta, A., Bansal, R., Alashwal, H., Kacar, A. S., Balci, F. & **Moustafa, A. A.**, 7 Jan 2022, Neural Substrates of the Drift-Diffusion Model in Brain Disorders, In: Frontiers in Computational Neuroscience. 15, 678232.

Prediction of Site Directed miRNAs as Key Players of Transcriptional Regulators Hassan, M., Iqbal, M. S., Naqvi, S., Alashwal, H., **Moustafa, A. A.** & Kloczkowski, A., 8 Apr 2022, Against Influenza C Virus Infection Through Computational Approaches

In: Frontiers in Molecular Biosciences. 9, 866072.

El Haj, M., Chapelet, G., **Moustafa, A. A.** & Boutoleau-Bretonnière, C., Pupil size as an indicator of cognitive activity in mild Alzheimer's disease 17 Jan 2022, In: EXCLI Journal. 21, p. 307-316 10 p.

El Haj, M., **Moustafa**, A. A. & Allain, P., 2022, Social commitment toward prospective memory tasks in cognitively impaired non-demented individuals In: Applied Neuropsychology: Adult. 29, 4, p. 643-650 8 p.

El Haj, M., Boutoleau-Bretonnière, C., **Moustafa, A**. & Allain, P., 2022, The discounted future: Relationship between temporal discounting and future thinking in Alzheimer's disease In: Applied Neuropsychology:Adult. 29, 3, p. 412-418 7 p.

Robin, F., **Moustafa**, A. & El Haj, M., 2022, The image of memory: relationship between autobiographical memory and mental imagery in Korsakoff syndrome, In: Applied Neuropsychology:Adult. 29, 1, p. 120-126 7 p.

Hamza, E. G. A., Gladding, S. & **Moustafa**, **A. A.**, Jan 2022, The Impact of Adolescent Substance Abuse on Family Quality of Life, Marital Satisfaction, and Mental Health in Qatar In: Family Journal. 30, 1, p. 85-90 6 p.

Heikal, S. A., Salama, M., Richard, Y., **Moustafa, A. A.** & Lawlor, B., 7 Feb 2022, The Impact of Disease Registries on Advancing Knowledge and Understanding of Dementia Globally, In: Frontiers in Aging Neuroscience. 14, 774005.

El Haj, M., Lenoble, Q. & **Moustafa**, **A. A.**, Sep 2022, The pupil and myself: pupil dilation during retrieval of self-defining memories, In: Neurological Sciences. 43, 9, p. 5259-5265 7 p.

Frydecka, D., Misiak, B., Piotrowski, P., Bielawski, T., Pawlak, E., Kłosińska, E., Krefft, M., Noaimy, K. A., Rymaszewska, J., **Moustafa, A. A.** & Drapała, J., 1 Jan 2022, The role of dopaminergic genes in probabilistic reinforcement learning in schizophrenia spectrum disorders, In: Brain Sciences. 12, 1, 7.

Ahmed, N., **Barczak, A.** L. C., Rashid, M. A. & Susnjak, T., Dec 2022, Runtime prediction of big data jobs: Performance comparison of machine learning algorithms and analytical models. In: Journal of Big Data. 9, 1, 67.

#### B. Book / Book Chapters

Khan, S. U., Manzoor, Z., **Rajaguru**, G. & Syed, S. H., 2022, Sustainable Development: Asia-Pacific Perspectives. Low, P. S. (ed.). Cambridge: Cambridge University Press, p. 339-358

**Kumar, K**. & Chaturvedi, P., 2022, ARFIMA and ARTFIMA Processes in Time Series with Applications. Recent Advances in Time Series Forecasting. Bisht, D. & Ram, M. (eds.). 1 ed. Boca Raton: CRC Press, p. 99-110 11 p.

Ahmed, T., Zhang, P. & **Kumar, K.**, 14 Jan 2022, Socio-demographic, Lifestyle and Neuropsychological Risk Factors on Alzheimer's Disease. Proceedings - 2021 IEEE International Conference on Bioinformatics and Biomedicine, BIBM 2021. Huang, Y., Kurgan, L., Luo, F., Hu, X., Chen, Y., Dougherty, E., Kloczkowski, A. & Li, Y. (eds.). IEEE, p. 3251-3258 8 p.

**Kumar, K.**, Jul 2022, Kuldeep Kumar's contribution to the Discussion of 'Assumption-lean inference for generalised linear model parameters' by Vansteelandt and Dukes

In: Journal of the Royal Statistical Society. Series B: Statistical Methodology. 84, 3, p. 712-713 2 p.

Meldrum, R., Wilkes, B., Ashford-Rowe, K., Zachariah, A., Beekhuyzen, J., **Randall, M**. & Show, J., 2022, 6 WAYS Australian universities are stopping student attrition

Simplus Australia. 27 p.

**Moustafa, A. A.** (ed.), 2022, Cybersecurity and Cognitive Science, San Diego: Elsevier. 400 p.

Rosa, A. & **Barczak**, **A.** L. C., 25 Apr 2022, Editorial Message: Special Track on the Computational Intelligence and Video & Image Analysis. SAC '22: Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing. Hong, J. & Bures, M. (eds.). p. 40 1 p. (Proceedings of the ACM Symposium on Applied Computing).

#### C. Conferences

Health Data Symposium - Machine learning and artificial intelligence in mental health data: Innovations for better care. Speakers from CDA Marcus Randall, Steve Stern and James Todd.

Van der Vegt, B., Farley, J. B., **Gepp, A.** & Keogh, J. W. L., Feb 2022. Performance analysis in women's Australian football: A review of current literature, challenges, and its potential for future research.

Ahmed, T., **Kumar**, **K.** & Zhang, P., 2 Nov 2022, The significance of Occupation on Socio-demographic and Lifestyle-related risk factors in the development of AD, p. 36.

**Acheampong, A. O.**, Boateng, E. & Amponsah, M., 14 Jan 2022, Econometric analysis of the economic growth-energy consumption nexus in emerging economies: The role of globalization. Energy-Growth Nexus in an Era of Globalization. Shahbaz, M., Tiwari, A. K. & Sinha, A. (eds.). Elsevier, p. 105-148 44 p.

Dzator, J., **Acheampong, A. O**. & Dzator, M., 12 Jan 2022, Urbanisation and Sustainable Development: Econometric Evidence from Australia, Community Empowerment, Sustainable Cities, and Transformative Economies. Chaiechi, T. & Wood, J. (eds.). Springer, p. 95-109

#### D. Comments / Discussion/ Book Reviews/ Software

**Kumar, K.,** Jan 2021. Statistics and Health Care Fraud: How to Save Billions, Ekin, Tahir. 2019. Boca Raton, Chapman Hall/CRC Press. In: Journal of the Royal Statistical Society. Series A: Statistics in Society. 184, 1, p. 401 1 p.

Kumar, K., Apr 2021. Kuldeep Kumar's contribution to the Discussion of 'Testing

by betting: A strategy for statistical and scientific communication' by Glenn Shafer, In: Journal of the Royal Statistical Society. Series A: Statistics in Society. 184, 2, p. 453-454 2 p.

**Kumar, K.**, Jan 2021, Time series clustering and classification, Maharaj, E. A., D'Urso, P., Caiado, J., 2019. Boca Raton, Chapman Hall/CRC Press. In: Journal of the Royal Statistical Society. Series A: Statistics in Society. 184, 1, p. 400 1 p.

**Kumar, K.** 2021. Response to basic Theme – VII Experimental and Observational Study Designs: Biometric Bulletin, 38(1), 3.

**Kumar, K.,** 6 Oct 2021. Measuring abundance, Upton, Graham, 2020 Pelagic Publishing, Exeter ix+ 226 pp., ISBN 978-1-78427-231-9 (E-pub ahead of print) In: Journal of the Royal Statistical Society. Series A: Statistics in Society. 1 p.

Khan, S. U., Manzoor, Z., **Rajaguru**, G. & Syed, S. H., 2021. Sustainable development in Pakistan: Vulnerabilities and opportunities. Sustainable Development: Asia-Pacific Perspectives. Low, P. S. (ed.). Cambridge: Cambridge University Press, p. 339-358

Aspinall, T., **Gepp, A.**, Harris, G., **Kelly, S.**, Southam, C., & **Vanstone, B. J.** 2021. LSMRealOptions: Value American and Real Options Through LSM Simulation. Software <a href="https://cran.r-project.org/web/packages/LSMRealOptions/index.html">https://cran.r-project.org/web/packages/LSMRealOptions/index.html</a>.

Aspinall, T., **Gepp, A.**, Harris, G., **Kelly, S.**, Southam, C., & **Vanstone, B. J.** 2021. NFCP: N-Factor Commodity Pricing Through Term Structure Estimation. Software <a href="https://CRAN.R-project.org/package=NFCP">https://CRAN.R-project.org/package=NFCP</a>.

**Gepp, A.,** 5 Jul 2021, (E-pub ahead of print). Advanced Statistics with Applications in R, Eugene Demidenko, 2020, Wiley Series in Probability and Statistics, John Wiley and Sons USA. Journal of the Royal Statistical Society. Series A: Statistics in Society. 2 p.

Tiwari, M., Kumar, K. & Gepp, A., Nov 2021. Case of the empty crates: Finding a solution to letter-of-credit fraud. In: Fraud Magazine.

#### Attachment 2

#### **Grants Approved (2022)**

**Rajaguru, G., Faff, R., Stern, S.** and **O'Neill, M**. Price Discovery in Equity and Volatility Futures for Trading and Hedging, 2022 Discovery Project, Australian Research Council: \$382,798

**Gepp, A., & Kumar, K.** Development of survey-based metrics and visualisations to track and reveal insights about modern slavery in supply chains. Funding \$100,000 (from Australian Government: A\$50,000.00, Informed365: A\$50,000.00)

**Hasso, T**. & Agliata, N. Big Data Analytics in SMEs and Firm Performance. Accounting & Finance Association of Australia and New Zealand: A\$5,800.00.

Hu, Ben and Duncan, K. AFAANZ Research Grants 2022 - \$3000.

#### **Grants Applied (2021)**

**Gepp, A. & Kumar, K.** via Innovations Connections grant. Approx 50,000. Survey data analytics work for Informed365.

**Rajaguru, G., Faff, R., Stern, S.** and **O'Neill, M**. Price Discovery in Equity and Volatility Futures for Trading and Hedging, 2022 Discovery Project, Australian Research Council. Grant Applied: \$321,150.

**Randall, M.,** Montgomery, J. and Lewis, A. Sustainable Agriculture: Optimal Australian Crop Plans Under Climate Change, 2023 Discovery Project, Australian Research Council. Grant Applied: \$316,889.

Mukhopadhaya, P., **Rajaguru**, G., Raghavan, M., Sen, R. and Srivastava, S. Australia's Trade in Medical Goods: Lessons from COVID19. 2022 Discovery Project, Australian Research Council. Grant Applied: \$314,920.

# Attachment 3: Centre-Aligned HDR Students

First Given Name	Family Name	Supervisor 1	Supervisor 2	Supervisor 3	Panel Additions
Dean	Earea	Bruce Vanstone	Tobais Hahn (Ext)	Christopher Bilson	
Hong	То	Terry O'Neil	Mike O'Neill (Ext)	Geoff Warren	
Sneha Harichandra	Raut	Simone Kelly	Adrian Gepp	Tim Hasso	
Tahera	Ahmed	Kuldeep Kumar	Ping Ling (Ext)		
Russell	Mills	Adrian Gepp	Kuldeep Kumar		
Andrea	Harris	Lisa Gowthrop	Judith Griffiths (Ext)	Kuldeep Kumar	
Robyn	McCormack	Rafi Chowdhury	Gulasekaran Rajaguru		
Dipanwita (Dipa)	Bhattacharjee	Rafi Chowdhury	Mark Spence	Gulasekaran Rajaguru	
Nikki	Cornwell	Adrian Gepp	Bruce Vanstone	Steve Stern	Christopher Bilson
Nicolo	Agliata	Tim Hasso	Jan Hollindale		
Jason	Pohl	Keith Duncan	Gary Bowman		
Kristopher	Riordan	Christopher Bilson	Gulasekaran Rajaguru		
Mitchell	Horrocks	Adrian Gepp	Bruce Vanstone		
Gangadharan	Dhamotharan	Gulasekaran Rajaguru	Safdar Khan		
Mark	Kassab	Rajat Roy	Kuldeep Kumar		
Braedan	Van der Vegt	Adrian Gepp	Justin Keough		
Corey	Stone	Kuldeep Kumar	Ping Zhang		
Karin	Schiller	Marcus Randall	Andrew Lewis (Ext)		
Isaac	Tonkin	Geoff Harris	Andrian Gepp	Bruce Vanstone	
Shietal	Ramesh	Rand Low	Bruce Vanstone		
Diana	Awad	Rajat Roy	Kuldeep Kumar		
Erline	Natalia	Christopher Bilson	Bruce Vanstone		
Clarisse	Lafleur	Tim Hasso	Francesco Barbera		
Volodymyr	Novykov	Adrian Gepp	Geoff Harris	Christopher Bilson	Bruce Vanstone
Thu Huong	Nguyen	Marcus Randall	Andrew Lewis (Ext)		
Randeep	Panwar	Kuldeep Kumar	Gulasekaran Rajaguru		

First Given Name	Family Name	Supervisor 1	Supervisor 2	Supervisor 3	Panel Additions
John	De Ravin	Robert Faff	Rand Low		
Dennis Leopold	Hafenrichter	Steve Stern	Dagmar Tomanek		
Ricky	Soh	Rand Low	Robert Faff	Colette Southam	
Sadia	Malik	Sekar Rajaguru	Sadfar Khan		
Michael	Senescall	Rand Low	Robert Faff		
Jason	Ryan	Christopher Bilson	Sekar Rajaguru	Steve Stern	James Todd
Shuya	Wang	Keith Duncan	Ben Hu		
Simon	Franz	Christopher Bilson	Matthias Meitner (ISM)	James Todd	Adiran Gepp
Klaus	Beiermann	Rajat Roy	Kuldeep Kumar	Ralf Brickau	
Hiba	Khan	Rajat Roy	Kuldeep Kumar		
Yen	Sun	Keith Duncan	Chris Bilson		
Raymond	Gaspar	Kuldeep Kumar	Neil Campbell		