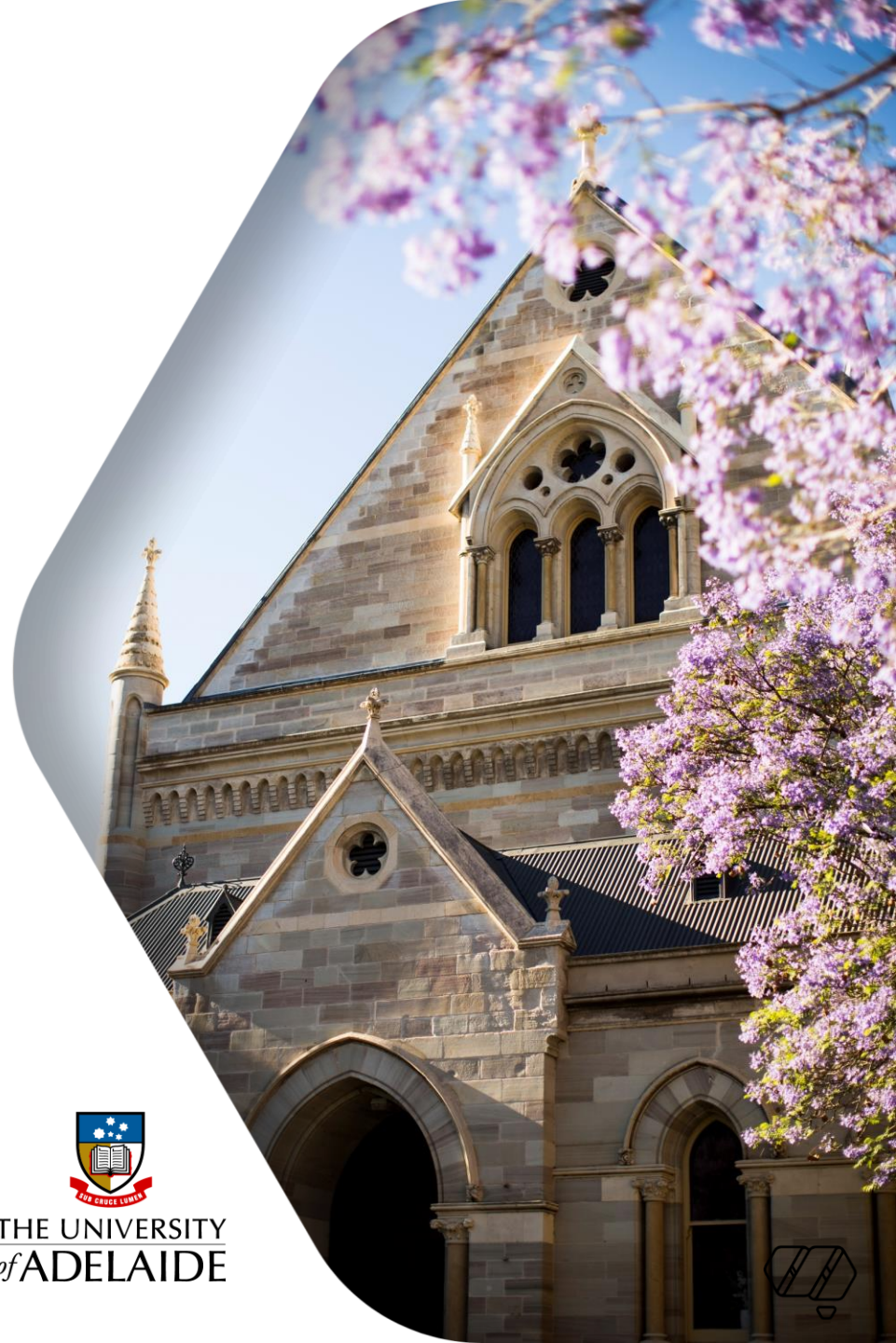


Heatwave Impacts & Resilience

Principal Researcher: Prof Peng Bi

Dr Sue Heatley

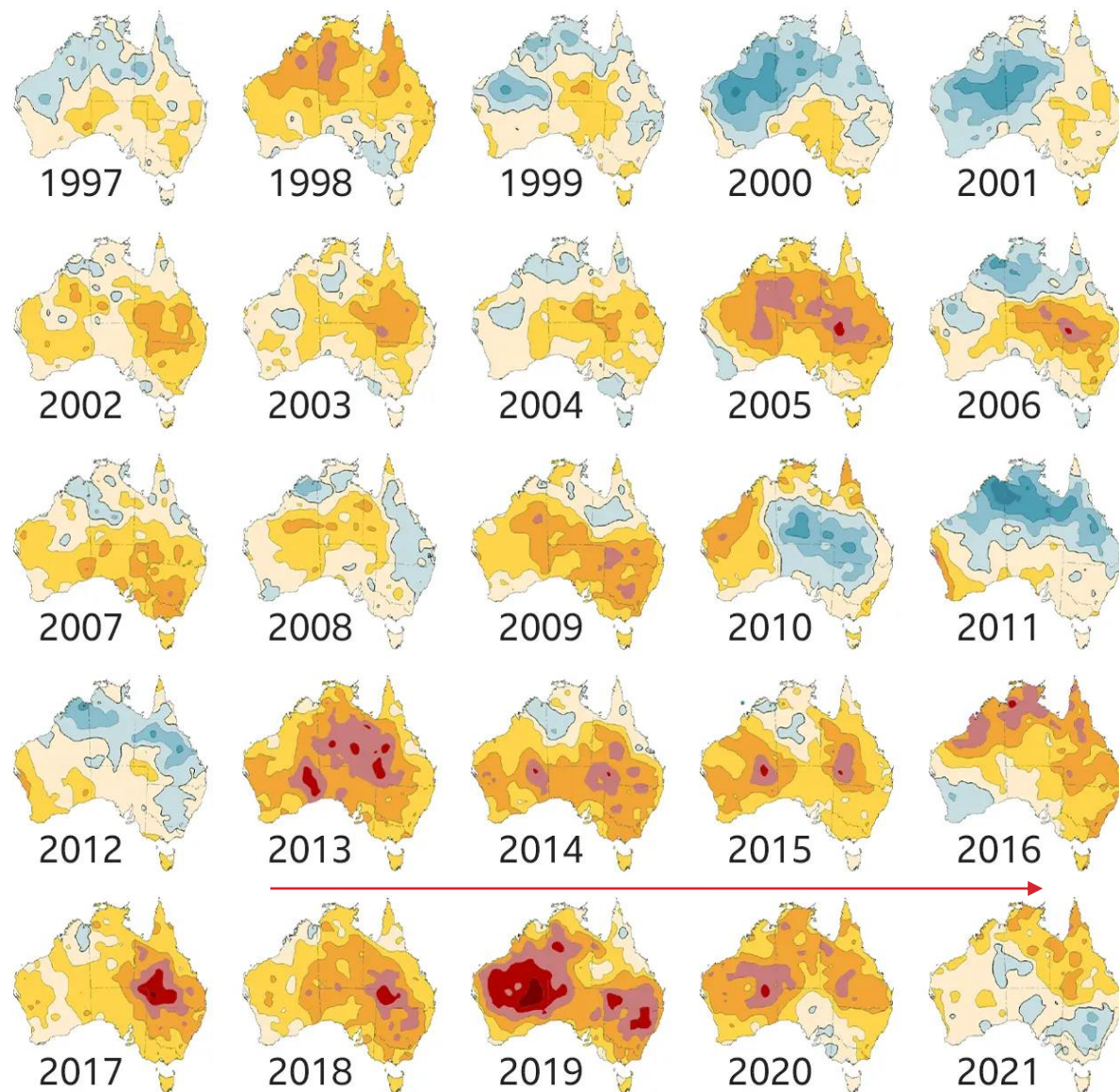
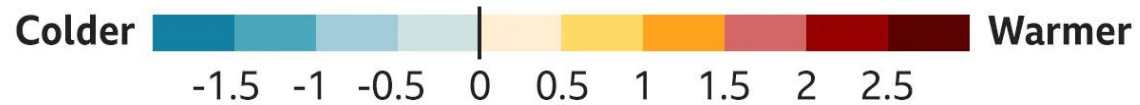
Project Manager
Environmental Change & Health Outcomes
School of Public Health
University of Adelaide



Background

- Australia's climate has increased by $\sim 1.5^{\circ}\text{C}$ since 1910
- 8 of the 9 warmest years have occurred since 2013





Bureau of Meteorology

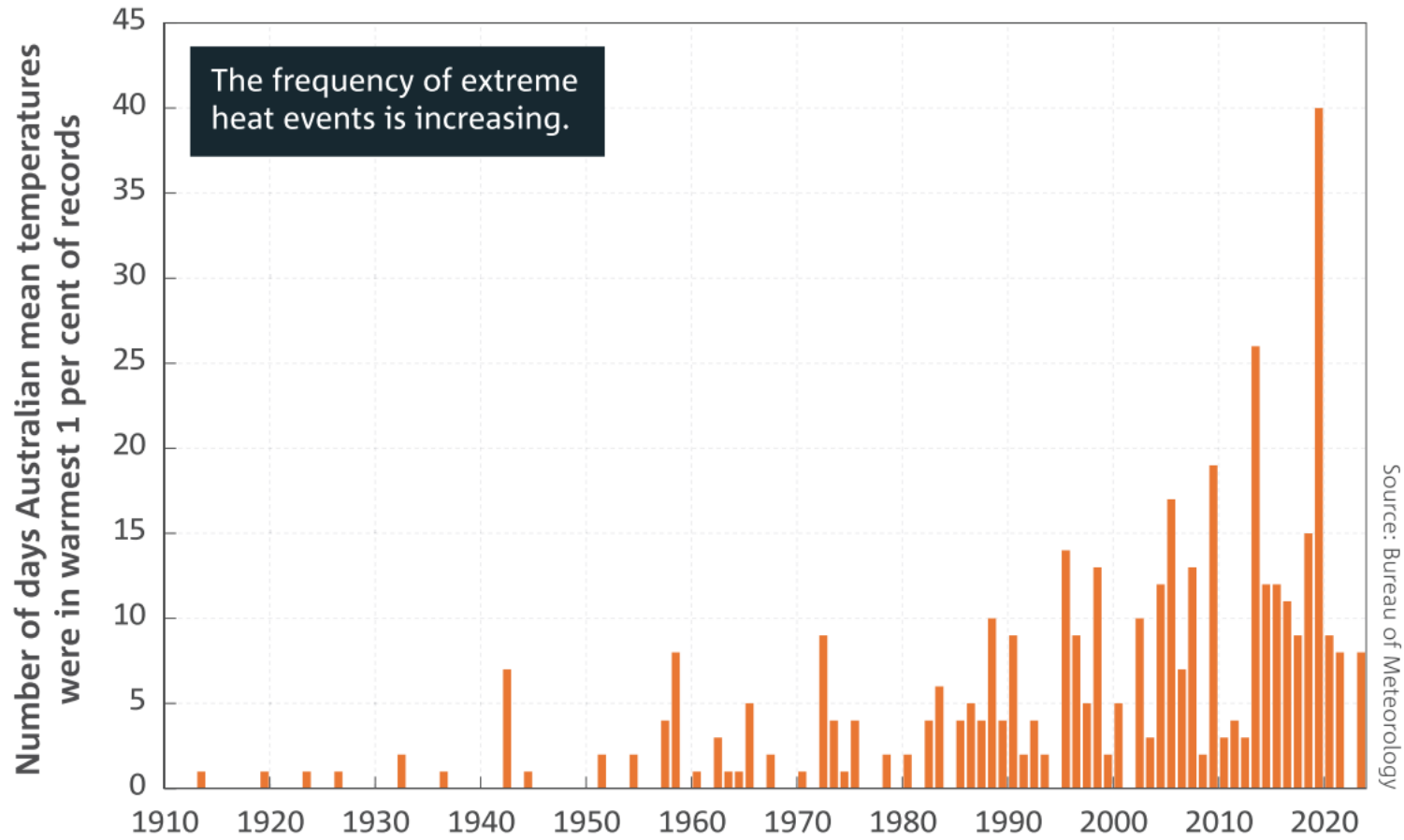


Background

- Australia's climate has increased by $\sim 1.5^{\circ}\text{C}$ since 1910
- 8 of the 9 warmest years have occurred since 2013
- Increase in both day and night temperatures
 - high monthly max temps occur 6 times more often
 - high night time temps occur 5 times more often

➤ More extreme heat events





Background

Heatwaves disproportionately impact vulnerable populations

- such as older individuals,
- young children,
- outdoor workers,
- those with existing medical conditions.



Background

The full impacts of heatwaves are largely undocumented

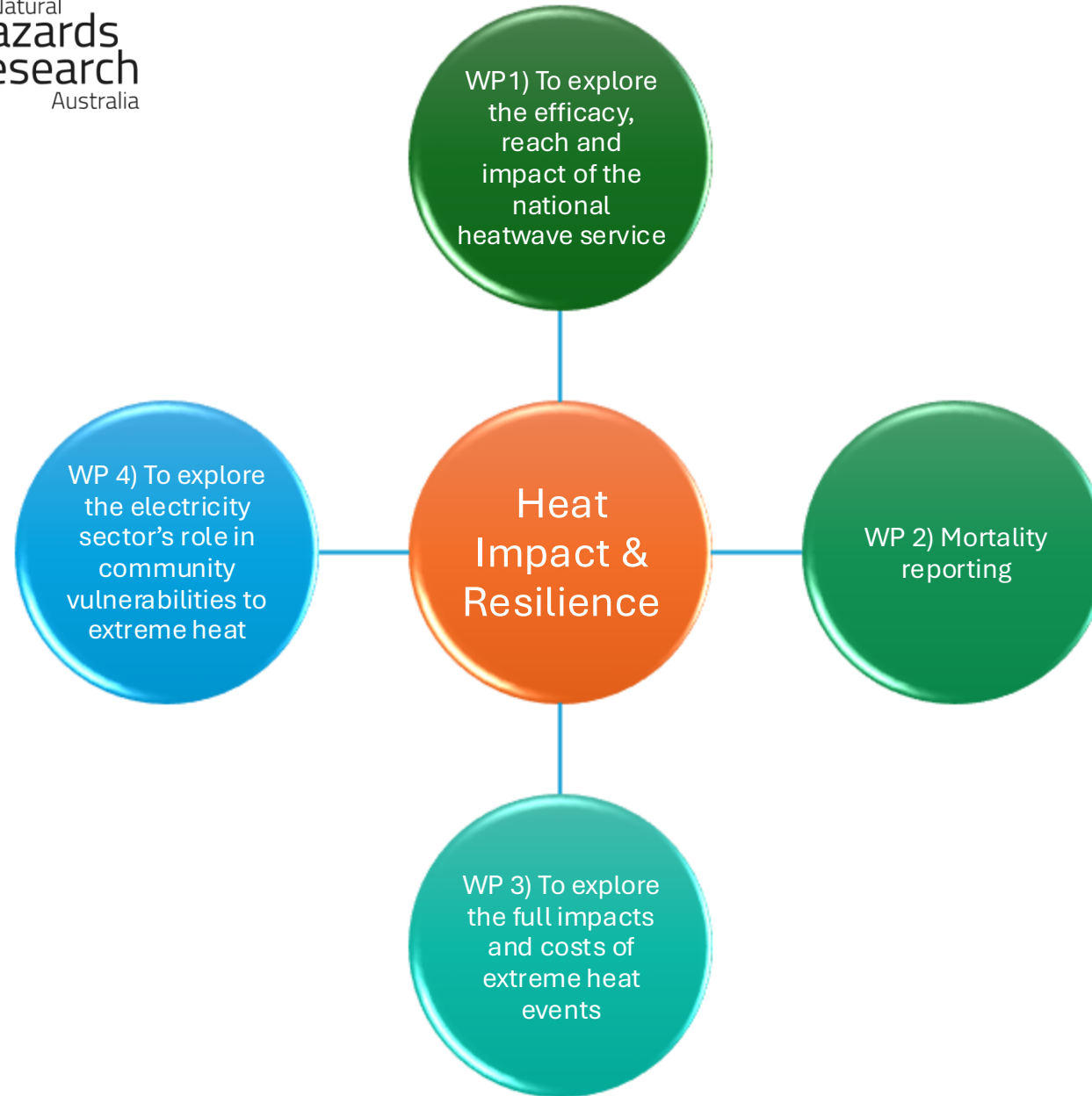
- timely recording of mortality,
 - injuries from accidents,
 - mental health impacts.
- **A comprehensive picture of heatwave impact and associated costs is needed to inform targeted policies, interventions, and resource allocation.**



Project Aim

To undertake a comprehensive program of work to enhance understanding of heatwave impacts and drive resilience.

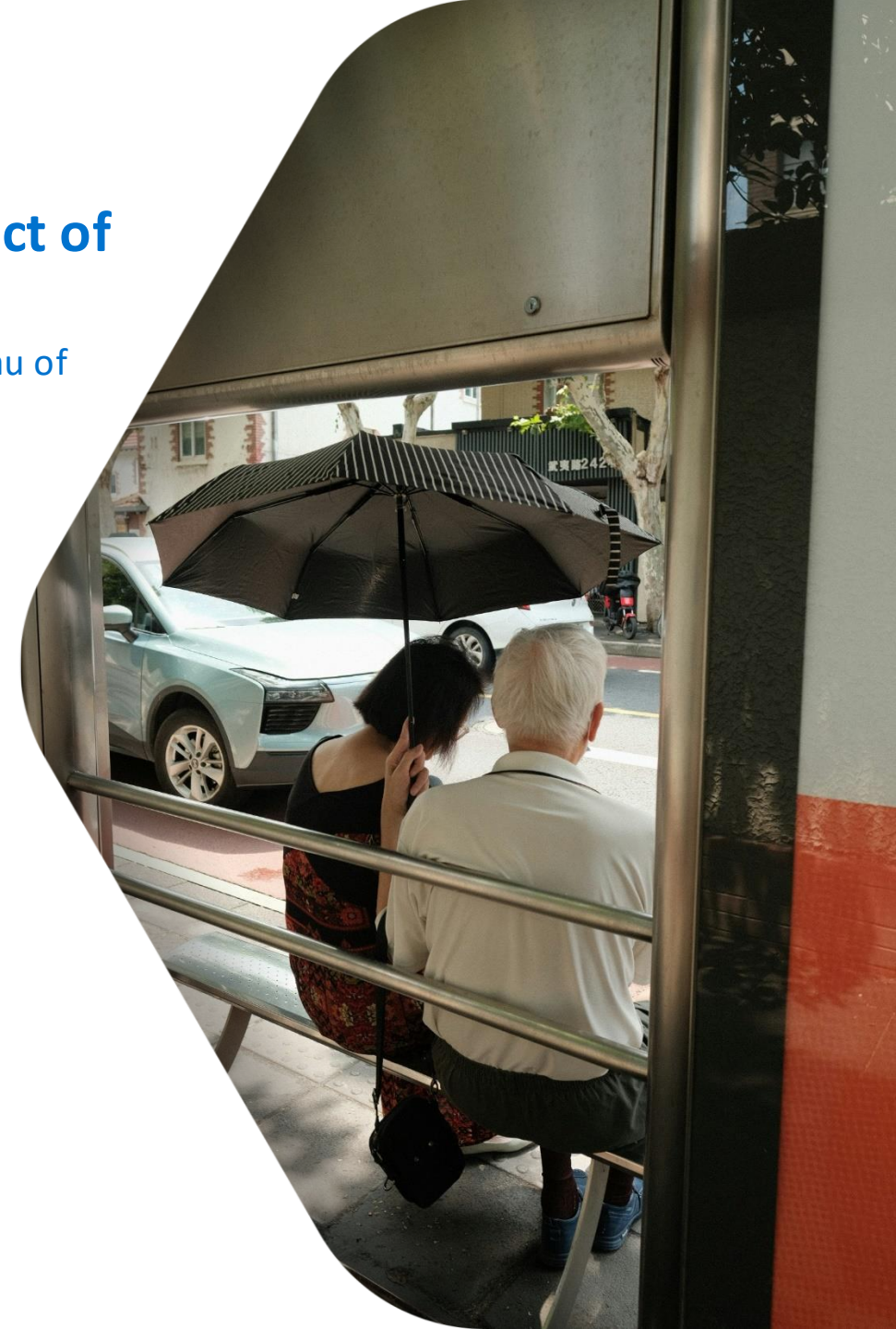




Work Package 1: To explore the efficacy, reach and impact of the national heatwave service

Co-leads: Dr John Nairn (World Meteorological Organisation), Dr Carla Mooney (Bureau of Meteorology) & Dr Olga Anikeeva (University of Adelaide)

- Interviews and focus groups with national stakeholders
 - How seven-day heatwave forecasts and decision-support and warning products are being interpreted
 - Barriers and challenges in translating warnings into action and public outreach
- On-line survey and focus groups among vulnerable populations
 - Public perceptions of the significance of extreme heat risk
 - How these communities are receiving and interpreting heatwave warnings
 - Barriers to taking preventive actions



Work Package 2: Mortality reporting

Co-leads: Dr Vanessa Prescott (Australian Institute of Health & Welfare) , Dr Matty Beaty (Australian Bureau of Statistics) & Dr Matthew Borg (University of Adelaide)

- In consultation with relevant authorities and agencies, such as ambulances services, explore and develop a methodology to accurately record and determine near-real time mortality from extreme heat
 - that could be implemented during heatwave events
 - inform agencies and the wider community of mortality impacts
- Explore and provide options for the implementation of the proposed methodology



Work Package 3: To explore the full impacts and costs of extreme heat events

Co-leads: Prof Kevin Parton (Charles Sturt University), Prof Kerstin Zander (Charles Darwin University) & Dr Blesson Varghese (AIHW)

- Develop an evidence-based and practical methodology to be used by decision makers to estimate the costs of key impacts of extreme heat
 - Healthcare, agriculture and energy impacts
- Apply the methodology to estimate direct and indirect costs of extreme heat now and into the future



Work Package 4: To explore the electricity sector's role in community vulnerabilities to extreme heat

Co-leads: Prof Hilary Bambrick (Australian National University), Prof Yuming Guo (Monash University) & Dr Michael Tong (Australian National University)

- Analyse the links between electricity failure and heat-related mortality and morbidity
 - Review of the international literature to identify case studies of extreme heat events where electricity failure occurred
- In consultation with stakeholders, develop a methodology to analyse data on mortality and morbidity linked to extreme heat and electricity failure



Progress to date

- Research Plan finalised
- Initial meetings held with leaders of each WP
- Ethics approval application submitted to the University of Adelaide Human Research Ethics committee (under review)
- Project manager appointed
- Two postdoctoral researchers appointed, one appointment in progress
- Subcontractor agreements with WP lead institutions in progress



Expected Outcomes

- Effective heatwave messaging to the community, particularly vulnerable people
- Comprehensive exploration of mortality and ambulance usage
 - Real-time surveillance systems during heatwaves
- Estimation of future heat-attributable costs in a warming climate
- Understanding of impacts of electricity failure during extreme heatwaves

➤ **Resilient community**



Acknowledgements

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