



2024 - 2030 STRATEGY

Research Strategic Plan

Ngala kwop biddi.
Building a brighter
future, together.



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Acknowledgment of Country

We acknowledge that Murdoch University is situated on the lands of the Whadjuk and Binjareb Noongar people. We pay our respects to their enduring and dynamic culture and the leadership of Noongar elders past and present.

The boodjar (country) on which Murdoch University is located has, for thousands of years, been a place of learning. We at Murdoch University are proud to continue this long tradition.

We also acknowledge the places in WA that the University is undertaking research

- | | | | |
|--------------------------|------------------------|---------------|---------------|
| • Amangu | • Kalaamaya | • Nhuwala | • Wangkathaa |
| • Badimaya | • Kaneang | • Noongar | • Wardandi |
| • Ballardong | • Kaninyang | • Nyaki-Nyaki | • Wiilman |
| • Bardi | • Kanyirninpa Jukurrpa | • Pinjarup | • Worla |
| • Bayungu | • Kija | • Thalanyji | • Wudjari |
| • Bibbulman | • Mardu | • Tjupany | • Yawuru |
| • Binjareb | • Minang | • Wadandi | • Yinjibarndi |
| • Goreng | • Ngarinyin | • Wadjuk | • Yurra |
| • Greater Noongar nation | • Ngarluma | • Wakathuni | |

For more information on the research being undertaken, **please refer to the appendix.**

Message from the *DVC*

Over the past decade, Murdoch has focused its research on areas of traditional strength across health, food and the environment.

The University's new Strategy for 2023-2030, entitled "Ngala Kwop Bididi", or "Building a Brighter Future, Together", recognises the need for Murdoch to broaden its research base and capabilities across all teaching areas while maintaining its track record of excellence through its Institutes and Centres.

I was appointed Deputy Vice Chancellor, Research and Innovation in July 2023 with a remit to grow Murdoch's rich tapestry of impactful research that has been 50 years in the making. One of my first major tasks has been to articulate and implement a new Research Strategic Plan that is aligned with the University's Ngala Kwop Bididi strategy. This research plan has been developed in collaboration with the Pro Vice Chancellors of the University's priority themes of Sustainability; Equity, Diversity and Inclusion; and First Nations, and complements the sub-strategies of each which include additional research-related considerations.

This Research and Innovation plan provides broad guidance and a long-term vision to implement strategies that will strengthen cross-disciplinarity and build strong, respectful relationships between researchers across all Murdoch campuses and beyond. As a university, we will grow our existing talent and cultivate new ones, broaden our research income base, increase the number of postgraduate research students and facilitate relationships between researchers, industry and other end-users. In doing so, we will continue to support equitable access to our world-class research infrastructure and work with other universities to build a "Team WA" capability.

The 2023 WA Energy Transition Summit presents Murdoch with an opportunity to be a leader and champion of a green energy agenda. As a global citizen, the university will also look abroad to develop new research partnerships that create impact through diplomacy in science and technology. Murdoch's membership with the Australian Africa Universities Network is an example of this nascent potential as we continue to strengthen our profile in the Indo-

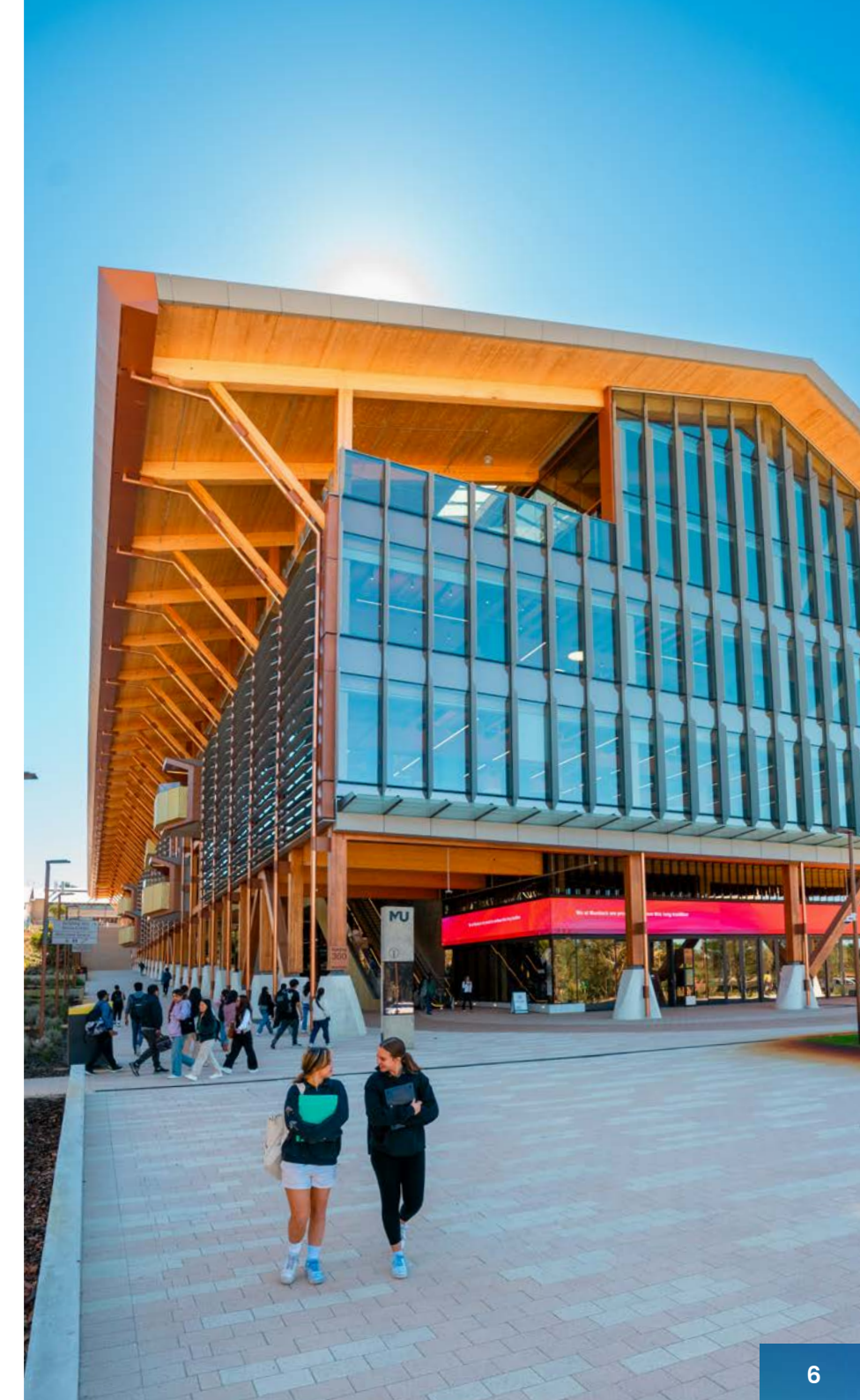
Pacific Region in both research and education. We will establish strategic collaborations through our international campuses in Singapore and Dubai that will position Murdoch as the research partner of choice in South East Asia and beyond..

Murdoch has established strong relationships with several Western Australian Government Departments, including the Department of Primary Industries and Regional Development, the Department of Jobs, Tourism, Science and Innovation, and the Department of Health. Future collaborative research projects offer significant opportunities to synergise activities, innovate, and shape policies for an Agri-food export industry valued at over \$15 billion. Murdoch University is well-positioned to become a key contributor to the development of the State's science and technology ecosystem, as outlined in the recently launched 10-year plan to support the State's science, research, and technology capability, performance and impact.

As part of our mission to increase research across all our disciplines, we will continue to use Scival to measure academic outputs such as articles, reviews and conference proceedings. From 2024, these performance indicators will be formally reported and assessed so as to provide the University with the basis for the development of growth targets through to 2030. In parallel, we will develop a range of new metrics to facilitate the assessment of economic, social and environmental impact. Taken together, these will provide the University with measures that reflect the impact of our translational research, its breadth, and its alignment with the strategic pillars of Sustainability, Equity, Diversity and Inclusion; and First Nations.

Professor Peter Eastwood

Deputy Vice Chancellor, Research and Innovation
Murdoch University



Overarching Objective

Our objective is to increase the University's impactful and progressive research in areas of strength and excellent research across our disciplines.

Over the last 10 years, Murdoch University has focused its research in the areas of Food, Health and the Environment, building on our historic strengths. We have recruited distinguished and early-career researchers in each area to grow research output and grant success. While successful, it has been recognised that there were broader capabilities that have not been adequately supported or developed.

The University's Strategy 2023–2030 commits to maintaining and growing the capabilities of our research institutes and centres, but also support and build a broader research base, ensuring we have quality research being undertaken in teaching areas so that all learning at Murdoch University is research-led.



Key activities to achieve this objective

- Maintain research focus/support and broaden the base to increase staff engagement.
- Promote and support research across our discipline base, both basic and applied.
- Provide mentoring and peer support to increase research performance.
- Build commercialisation, entrepreneurship, partnership, and consultancy activities.
- Enhance support for research project development.
- Support the development of the next generation of researchers through excellence in HDR supervision.

Research at Murdoch

Research is creative work undertaken systematically to increase the stock of human knowledge and devise new applications based on that knowledge. All learning at Murdoch should be research-led and our research should be accessible, impactful, and collaborative.

This Research Strategy has been shaped through collective input from the university community and is aligned with the overarching University Strategy, emphasising its three core pillars.



At the heart of this strategy is our commitment to research integrity. Murdoch expects the highest standards of integrity in all aspects of research conducted by its staff and HDR students and is committed to creating and maintaining an environment that celebrates integrity above publication counts, citations, grant income and other research metrics. Key commitments include the implementation of [FAIR principles](#) for research data management and the [CARE principles](#) for Indigenous data governance.

Research inputs and outputs can take multiple forms, from traditional, such as journal articles and competitive grants, to non-traditional, such as film, audio, performance, exhibitions and reports. Murdoch aims to acknowledge research

in its many forms and will develop, over time, a series of measures that document the diversity of our research and its outputs.. Murdoch is well known for its translational, impactful research. Through this Research Strategic Plan, the University commits to embedding consideration of its Strategic Themes in all research being undertaken by it: Sustainability; Equity, Diversity and Inclusion; and First Nations.

Murdoch will continue to undertake research that changes lives and society for the better and contributes to solving major societal and environmental challenges by delivering excellence across our disciplines through six key areas: **Culture; Partnerships; Impact; Support; Graduate Research; and Infrastructure.**

Culture

We aim to have a vibrant research culture where all staff are encouraged to engage in research.

We strive for a research culture where staff and students can thrive in an exciting and future-looking research environment and where the mentorship of our next generation of researchers is highly valued. We will move away from exclusivity in research to inclusiveness. We remain committed to our Research Institutes and Centres but will also support emerging research areas, development of new University Centres, and all research conducted by Murdoch staff and students.



Actions

- Foster a culture where students and staff are encouraged to engage in research and enterprise.
- Work with colleges, schools, institutes and research centres to ensure that the workload model supports research and researcher training.
- Enhance communication and clarify roles and expectations across colleges, schools, institutes and research centres.
- Encourage collaborations between research centres and schools as we broaden our research base.
- Promote and highlight the importance of cross-university events including research days, seminars, and public lectures.
- Celebrate research success.

Measures of Success

- Proportion of staff named as authors on research publications.
- Proportion of staff named as a Principal or Chief Investigator on grant applications.
- Percentage of staff engaged in research activities across the university.
- Number of research stories in Tier 1 media.
- Positive changes as measured through staff satisfaction surveys.

Partnerships

We aim to be a partner of choice in research.

Local, national and international partnerships are crucial to undertaking impactful research, fostering collaboration, resource sharing and knowledge exchange. We also wish to leverage the advantage of our geographical position south of the city of Perth to engage with industry in the Kwinana strip, the wetlands, and our co-location with the Murdoch Health and Knowledge Precinct.



Actions

- Build network opportunities that foster collaborative research, such as collaborative research network events, programs and workshops.
- Be a partner of choice and remove barriers by streamlining processes.
- Build strong partnerships with the Murdoch Health and Knowledge Precinct and Industry.
- Reinstitute the Visiting Professor scheme to build enduring international collaborations.
- Establish clear pathways and standards for employees to undertake sabbaticals abroad.
- Work with industry to grow the number of HDR students undertaking an internship as part of their degree.

Measures of Success

- Research Income (Category 1-4).
- Number of externally funded projects.
- Percentage of publications with an international author.
- Percentage of publications with authors from industry.
- Number of HDR students undertaking an internship.

Impact

We aim to undertake impactful research that makes a meaningful difference.

Impactful and progressive research is a core deliverable of this Strategic Plan. Impact can take many diverse forms, including knowledge, social, economic and environmental measures, amongst many others. Murdoch is well known for its translational, impactful research. We want all research to make a difference through impact that aligns with the strategic pillars of Equity, Diversity and Inclusion, First Nations and Sustainability.



Actions

- Create an understanding of what “research impact” means across Murdoch disciplines.
- Develop clear metrics to measure research impact and develop data collection mechanisms.
- Showcase research success stories with tangible outcomes on the university website and continuously improve the Murdoch research portal to showcase Murdoch’s research.
- Implement a commercialisation framework to grow entrepreneurial capital.
- Leverage [Scimex](#) to distribute Murdoch research outputs.
- Leverage the capabilities of the Food Innovation Precinct and the South Metropolitan Health Campus.

Measures of Success

- Commercialisation and consulting revenue.
- Field Weighted Citation Impact (knowledge impact).
- Development of a range of metrics that assess economic, social and environmental impact.

Support

We aim to provide effective and efficient support to enhance and facilitate impactful research.

Research support refers to the resources, services and assistance provided to researchers during their scholarly endeavours. Such support at Murdoch will facilitate and enhance the research process thereby helping researchers succeed with their scholarly pursuits.



Actions

- Establish an effective Research Development function within the Research and Innovation Office.
- Leverage the power of Generative Artificial Intelligence (GenAI) and Data Analytics in research and support by establishing a research centre.
- Enhance research management processes that reduce “red tape” while ensuring compliance with relevant legislation.
- Develop researcher mentoring and support training programs for all staff.

Measures of Success

- Number of research initiatives submitted (e.g. Centres of Excellence, Synergy grants, etc).
- Time between notification of grant success and project commencement.
- Number of grants awarded to early- and mid-career researchers.

Graduate Research

We aim to deliver an optimal environment for HDR candidates through high standards, mutual respect, and continuous improvement in supervision.

Supervising Higher Degree by Research (HDR) candidates is a rewarding experience, offering personal and professional growth to both supervisors and candidates. Through maintaining high standards, communicating effectively, and fostering mutual respect with HDR candidates, we can provide an optimal environment for candidate success. To achieve this, supervisors should seek continuous improvement through engaging with colleagues and being open and willing to reflect on past supervisory experiences.



Actions

- Maintain a Supervisor Registry with integration into the Academic Career Development Conversation (ACDC).
- Develop contemporary supervisor training programs.
- Acknowledge excellence in supervision.
- Establish a culture of continuous improvement in supervisory practices.

Measures of Success

- Number of staff on the supervisor registry.
- Number of educational programs focused on supervisor training.
- Positive postgraduate research satisfaction survey results.

Research Infrastructure

We aim to provide high-quality research infrastructure that enables impactful and competitive research outcomes.

High-quality research infrastructure, both on campus and through strategic collaborative access, attracts top-tier researchers and students from around the world.

Murdoch has many world-class facilities, such as the Australian National Phenome Centre, Antimicrobial Resistance Laboratory and Agriculture and Medical Biotechnology research infrastructure capabilities that can be leveraged for discovery science. Such infrastructure is needed for our staff to deliver impactful research outcomes. It provides them with the necessary tools and environment to conduct advanced research,



Actions

- Conduct an audit of research infrastructure across the campus.
- Develop access committees to optimise the use of university research infrastructure and ensure equitable access.
- Engage with “Team WA” to share access of key infrastructure and equipment across the state.
- Develop equitable charging models for the use and maintenance of equipment and facilities.
- Develop external applications for funding of infrastructure.

Measures of Success

- Number of infrastructure grants submitted.
- Rates of equipment usage.

Appendix

Amangu – Arrowsmith

- Movement ecology, energetics and age structures of three species of black cockatoo.

Amangu – Chapman Valley

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby's cockatoo ecology in agricultural landscapes.

Amangu – Eneabba

- Energetic and movement ecology of black cockatoos in modified landscapes.

Badimaya

- Effective methods for tracking feral cat populations in the southern rangelands.
- Understanding predator baiting methods.

Ballardong

- Understanding predator baiting methods.

Bardi – Dampier Peninsula

- Incorporating bush tucker into restoration of degraded savannah.

Bayunga – Coral bay

- Biology/ecology of aquatic species and sustainable management of inland/aquatic ecosystems.

Bibbulman

- Camera trapping at fire dams across south-west WA and their use by feral pigs and deer.

Bibbulman – Nannup

- Movement ecology in black cockatoos, implications for species conservation.

Bibbulman – Shannon

- Movement ecology, energetics and age structures of three species of black cockatoo.

Binjareb – Nambeelup

- Food Innovation Precinct WA (FIPWA).

Binjareb – Mandurah

- Feral cats and native fauna's use of underpasses across active and rehabilitated mine-sites.
- Artificial refuges to conserve native species.
- Examining native marsupial escape.

Binjareb – Peel

- Keep Carnaby's Flying – Ngoolarks Forever. Community engagement project supporting Black cockatoo conservation.
- Tracking the movement of invasive Sulphur crested cockatoos in Western Australia.

Binjareb – Willowdale

- Feral cats and native fauna's use of underpasses across active and rehabilitated mine-sites.
- Climate-adjusted seed sourcing strategies for mine rehabilitation.

Goreng – Boxwood Hill, Nalyerlup, Ongerup

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby's cockatoo ecology in agricultural landscapes..

Goreng – Fitz–Stirling Corridor

- Invasive predators' use of native vegetation across the Fitz–Stirling corridor.

Greater Noongar nation – South West cnr of WA

- Noongar knowledge of the night sky.

Kalaamaya

- Understanding predator baiting methods.

Kaneang – Katanning

- An indigenous perspective of the history of the WA railways.

Kaneang – Katanning

- An indigenous perspective of the history of the WA railways.

Kaninyang – Bridgetown / Chowerup

- Movement ecology in black cockatoos, implications for species conservation.

Kaninyang – Beela

- Development and optimisation of tracking methods to facilitate movement ecology research in black cockatoos.

Kanyirninpa Jukurrpa (JH) led by Martu custodians – Pilbara

- Community safety.

Kija – Kimberley

- Modelling and GPS tracking of feral pigs across the Kimberly.

Mardu – Pilbara (Yandi)

- Climate-adjusted seed sourcing strategies for mine rehabilitation.
- Survey methods for waterbirds and waders in the Pilbara.
- Movement ecology of wedge-tailed eagles in mesic and arid parts of WA.
- An indigenous perspective of the history of the WA railways.
- Corporate ethical responsibility.

- Bird and bat studies for the Bonnie Downs wind generation hub.
- Wind turbine impacts on Australian Bustards.

Minang – Albany region

- An indigenous perspective of the history of the WA railways.

Minang – Albany, Denmark, Porongorup, Stirling Range

- Movement ecology in black cockatoos, implications for species conservation.

Minang – Nalyerlup

- Energetic and movement ecology of black cockatoos in modified landscapes.

Minang – Tenterden

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby’s cockatoo ecology in agricultural landscapes.

Ngarinyin – Kimberley

- Modelling and GPS tracking of feral pigs across the Kimberly.

Ngarluma – Karratha

- Development and trial of invasive species monitoring tools.

Nhuwala – Barrow Island

- Environmental conservation and sustainable industrial developments at Barrow Island.
- Biosecurity and surveillance monitoring.
- Examining native marsupial escape.

Noongar (Bilya/Beeliar)

- Children’s rights to housing.

Noongar (Martu)

- Children’s rights to housing.

Nyaki-Nyaki – Newdegate

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby’s cockatoo ecology in agricultural landscapes.

Njaki Njaki – Wanderin Sanctuary, Narembreen

- Examining native marsupial escape.

Pinjarup – Arrowsmith

- Movement ecology, energetics and age structures of three species of black cockatoo.

Pinjarup – Mandurah

- Quenda and domestic cat’s use of gardens and reserves.

Pinjarup – Waroona

- Movement ecology in black cockatoos, implications for species conservation.

Thalanyji – Mundabullanga Station

- Movement ecology and management approaches to mitigate fox predation.

Tjupany Badimaya – Southern Rangelands

- Examining the impact of cell fencing on dingo populations, feral cats, and small vertebrates.

Wadandi and Wadjuk

- Quenda habitat use and school-based citizen science project post-fire habitat protection.

Wadjuck Boorloo (Perth region)

- An indigenous perspective on the history of the WA railways

Wadjuk – Kelmscott

- Development and optimisation of tracking methods to facilitate movement ecology research in black cockatoos.

Wadjuk – Perth

- Impact of artificial light at night on roost quality in black cockatoo species.

Wadjuk – Rottnest Island

- History and ongoing impacts of Aboriginal incarceration on Wadjemup (Rottnest Island) from 1838-1931.
- Reconciliation and truth-telling of Wadjemup’s prison history.
- Examining native marsupial escape.

Wadjuk – Murdoch campus

- Murdoch University South Street Campus.

Wadjuk – Mundaring Shire

- The impact of Phytophthora cinnamomi on quenda habitat.
- Privacy and surveillance issues of fitness tracking apps.
- Shape shifting: reflections on creating and utilising a collaborative teaching space and the transformation of teaching practice

Wadjuk – Whiteman Park

- Examining native marsupial escape.

Wakathuni

- Australia’s first indigenous owned renewable hydrogen logistics company in the Pilbara.

Wangkathaa

- Children’s rights to housing

Wangkathaa – Mid-west WA / Goldfields

- Dingoes’ interaction with camera traps across the Rangelands.

Wardandi – Augusta

- Movement ecology, energetics and age structures of three species of black cockatoo.

Wardandi – Busselton

- Movement ecology in black cockatoos, implications for species conservation.

Wardandi – Donnybrook

- Movement ecology, energetics and age structures of three species of black cockatoo.

Wiilman – Collie

- Collicrete – developing a new industry using fly-ash for geopolymer concrete.
- An indigenous perspective of the history of the WA railways.
- Habitat connectivity and use of corridors by introduced predators and native species.
- Development and optimisation of tracking

methods to facilitate movement ecology research in black cockatoos.

Wiilman – Dwellingup

- Energetic and movement ecology of black cockatoos in modified landscapes.

Worla – Kimberley

- Modelling and GPS tracking of feral pigs across the Kimberly.

Wudjari – Condingup, Esperance, Munglinup

- Movement ecology in black cockatoos, implications for species conservation.

Wudjari – Hopetoun, Jerdacuttup

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby’s cockatoo ecology in agricultural landscapes.

Wunambul – Kimberley

- Modelling and GPS tracking of feral pigs across the Kimberly.

Yawuru – Broome

- Yawardani Jan-Ga Horses Helping.
- Contemporary performance to explore the complex stories about Australia’s contested lands.

- Green turtle & dugong population exploration.

Yinjibrandi

- Australia’s first indigenous owned renewable hydrogen logistics company in the Pilbara.

Yuat – Cataby

- Integrating ecotoxicology and movement ecology in breeding populations of Carnaby’s cockatoo ecology in agricultural landscapes.

Yuat – Gingin

- Movement ecology in black cockatoos, implications for species conservation.
- Movement ecology, energetics and age structures of three species of black cockatoo.

Yued

- An indigenous perspective of the history of the WA railways.

Yurra

- Australia’s first indigenous owned renewable hydrogen logistics company in the Pilbara.

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- **The FAIR Principles** provide guidelines to improve the Findability, Accessibility, Interoperability and Reusability of digital assets. They provide a framework for sharing data in a way that maximises its use and reuse. Application of these Principles varies by discipline. More information can be found at <https://ardc.edu.au/resource-hub/making-data-fair/>
- **The CARE Principles** reflect the important role of data in advancing Indigenous innovation and self-determination. The principles reflect the Collective benefits, Authority to control, Responsibility and Ethics that ensure that data movements like the open data movement, whatever they're advocating and pursuing, respect the people and purpose behind the data. More information can be found at <https://ardc.edu.au/resource/the-care-principles/>

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- **Scimex (the Science Media Exchange)** is an online news portal aimed primarily at helping journalists cover science. The site features a Newsfeed, our Find an Expert database of

media-savvy scientists, a multimedia hub and science events calendar. More information can be found at <https://www.scimex.org/>



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