ROCK ART AUSTRALIA

SCIENCE ADVISORY COUNCIL RESEARCH WORKSHOP

27 NOVEMBER 2025

COMMUNICATING ROCK ART RESEARCH: **CULTURE, COMMUNITY & CONNECTION**

WORKSHOP PROGRAM

ROCK ART AUSTRALIA
Uncovering our history

Presented in partnership with
THE UNIVERSITY OF WESTERN AUSTRALIA

Rock Art Australia acknowledges the Traditional Owners of Country across Australia and recognises their continuing connection to lands, waters and culture. We pay our respects to Elders past and present.

Morning session

8:15 AM - 12:45 PM

8:15 - 8:40
Registration

8:40 - 8:50
Alton Walley
Welcome to Country

8:50 - 9:00 AM
Ken Wyatt (Chair of the RAA Board)
Opening Remarks

9:00 - 9:10 AM
Helen Green (SAC Chair)
2025 Overview

9:15 - 10:15 AM
Ray Tobler,Tristen Jones, Ken Wyatt, Paul Hartley, Amos Smith, Mark Jones, Charmaine Cinnabar

Panel Discussion
Communicating Research with Impact

Exploring strategies for co-designing research, identifying community priorities, and communicating results in ways that support Ranger programs, enhance school outreach, and engage donors effectively.

Images produced with permission from relevant Traditional Owners

Panellist Biographies

Ken Wyatt AM

Ken is the Chair of Rock Art Australia and a respected Noongar leader. He served in the Australian Parliament from 2010 to 2022 as the Member for Hasluck, becoming the first Indigenous Australian elected to the House of Representatives, the first to serve as a government minister, and the first appointed to Cabinet. He brings deep experience in national leadership, cultural governance, and the importance of ensuring that rock art is recognised as Aboriginal cultural heritage, owned and led by Traditional Owners.

Dr Tristen Jones

Tristen is an archaeologist at The University of Sydney whose work centres on co-designed, community-led rock art research in the Northern Territory. Her recent article in The *Conversation* highlights how Indigenous leadership, digital technologies and long-held cultural knowledge can come together to protect rock art. Tristen was also a key part of the RAA supported school outreach program at East Kimberley College in 2025. She brings expertise in ethical research design and hands-on experience guiding large, collaborative cultural heritage projects.

Mark Jones

Mark is a Kimberley-based filmmaker who has lived and worked with communities across the region for decades. His film *Two Ways* documents the collaboration between Balanggarra Traditional Owners, scientists and archaeologists as part of Rock Art Australia–supported research. Mark's work exemplifies ethical, respectful storytelling and the power of film to support communities in sharing their own narratives.

Charmaine Cinnabar

Charmaine is a proud Djabuganjdji and Gimuy Walubara Yidinji woman from far north Queensland. She is the first woman in her family to complete a science degree and to revive one of her family's languages, Ngirrma. She is currently undertaking a Master of Science at JCU, majoring in Tropical Biology, and recently completed the Coral Sea Foundation's *Sea Women Great Barrier Reef* training with Indigenous women from across Australia, Papua New Guinea and the Torres Strait Islands. Charmaine is committed to championing Indigenous ecological knowledge in the management, conservation and restoration of Land, Sea and Sky Country. She joined the Science Advisory Council in 2025 as the student representative.

Dr Ray Tobler

Ray is a population geneticist whose research explores the deep genetic histories of Indigenous communities across the region. His work involves partnering closely with communities to gather genomic samples in ways that uphold Indigenous control, data sovereignty and ethical standards. Drawing on pioneering models such as the National Centre for Indigenous Genomics and the Indonesian Genome Diversity Project, Ray is committed to research that "rebalances the narrative" and delivers meaningful benefits and agency to the communities he works with.

Paul Hartley

Paul is a teacher at Outdoor School, Department of Education, Victoria. Paul spent ten years as the camp manager for the Rock Art Australia–supported Dating Project, living and working on Country in a deeply collaborative way. He played a key role in communicating research plans with the Kalumburu community and Traditional Owners, ensuring work was undertaken respectfully and transparently. Paul's role is to coordinate the Kimberley Pathways Program and leads high school camps with Kimberley communities, and coordinated this year's Kalumburu Women's Cultural Education Engagement Project, which will be featured later today.

Amos Smith

Amos is a Young Ranger Coordinator at Balanggarra Aboriginal Corporation. A 2024 finalist for the Premier's Science Awards—Aboriginal STEM Student of the Year, he is committed to inspiring and empowering younger generations to care for Country. Amos contributed significantly to the Rock Art Australia–supported school outreach program at East Kimberley College in 2025. He brings an energetic, youth-driven perspective on land management, cultural leadership, and building future capacity within communities.

10:15 - 10:45 AM

Morning Tea

10:45 - 11:00 AM

Russell Mullett* (GLaWAC)

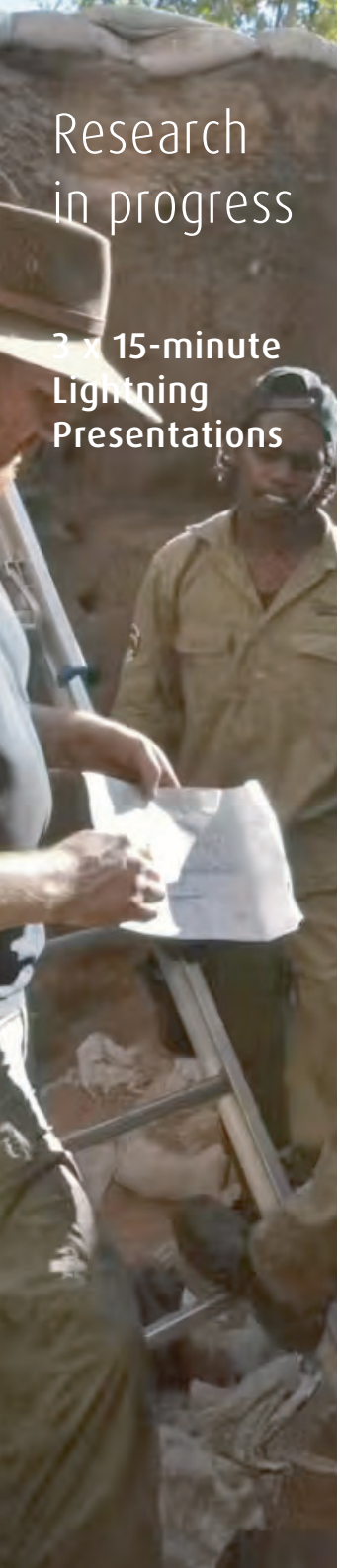
Waribruk Revisited

Finger fluting sites are not very common across the world and could be determined to be a rare art form. Capturing the cave using 3D scanning and photogrammetry can be shared will the GunaiKurnai community,Gippsland, Victoria.

Access to Waribruk is difficult and dangerous. Using digitised materials allows this to be shared with our Elders who will never physically be able to visit. This was one of many reasons for undertaking research.

Revisiting Waribruk with our research partner Monash University enabled the GunaiKurnai to investigate fully the finger fluting art. Experts engaged in the research extract other valuable information such as;

- Field mapping of the geomorphology, the physical features of the cave and writing up more than 500,000 years of the cave's evolution
- we know how old our Ancestors were when they put their designs on the soft walls of the cave.
- we also know what attracted them to choose this particular area of the cave
- we know at what period in time the Ancestors made their designs in the soft mud
- studies on faunal remains, the animals
- studies on plant pollen and phytoliths which form inside decaying plants this particle can survive for thousands of years.



Research in progress

3 x 15-minute Lightning Presentations

11:00 - 11:15 AM
Chris Clarkson (Griffith University) and Njanjma Rangers

A new ARC-LP with RAA: Human Responses to Post-Glacial Sea Level Rise at Red Lily, Arnhem Land.

This talk shares recent results from studying what lies beneath the surface at archaeological sites near Wulk Lagoon on Manilikarr Country in western Arnhem Land.

We worked in partnership with Senior Manilikarr Elder Alfred Nayingull, the Njanjma Rangers, and the Northern Land Council.

Using two techniques, Electrical Resistivity Tomography (ERT) and Ground Penetrating Radar (GPR), we explored how deep the soil is and what the layers beneath the ground look like before any further work takes place.

We will share the results of these surveys and discuss the next steps for each site.

11:15 - 11:30 AM
Hamish McGowan (UQ)

65,000 years of environmental change in the Kimberley: What we've learned and opportunities to fill our remaining gaps in knowledge

Australia's climate and environment have undergone dramatic change over the past 50 to 65 thousand years since the arrival of people. Drivers of such change include variability in the Earth's orbit around the Sun, change in ocean circulation, land clearing through burning and recent global warming. Understanding of the impact of these forcings on the climate and environment of the Kimberley is essential to inform discussions of the region's human history including its globally important rock art.

This project has collected and analysed sediment cores from mound springs, flood plains and swamps to develop records of environmental change in the Kimberley over the past 65 thousand years in response to events such as the Last Glacial Maximum when sea level was around 130 m lower than present. High resolution climate models, run on supercomputers, have been used to focus on time periods of specific interest for comparison with records developed from the geologic archives.

These have enabled the first high-resolution reconstructions of the paleoclimate of Kimberley at spatial scales of 10 to 50 km for direct reference to individual archaeological sites.

Collectively, this research provides important windows to the Kimberley's past and builds knowledge to inform predictions of its possible future in response to global change.

11:30- 11:45 AM

Antonia Papasergio and
Rachel Popelka-Filcoff
(University of Melbourne)

Seeing Through Time: Advanced Imaging of Painted Layers at Pundawar Manbur (Kimberley).

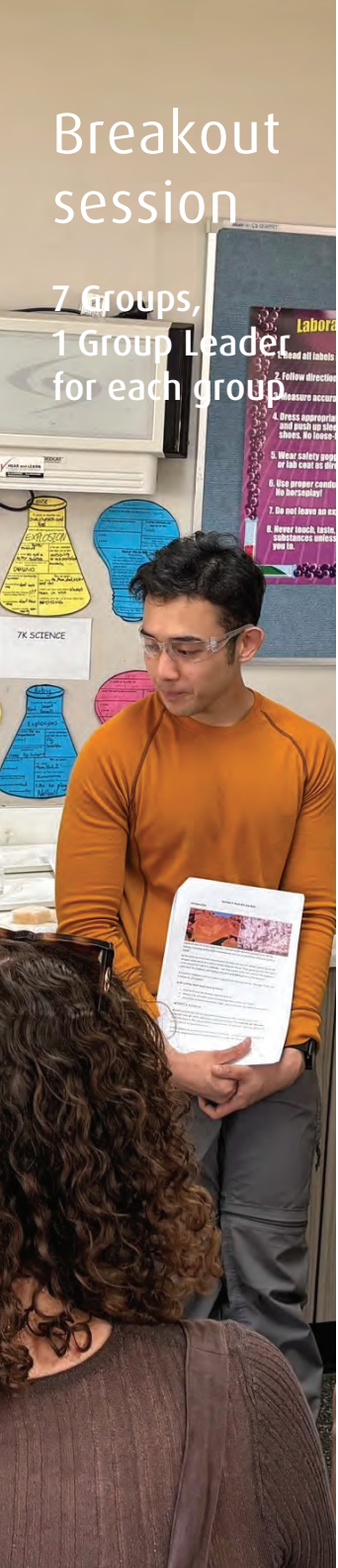
Layered paints in rock art can be hard to see clearly, especially when pigments have faded over time. Traditional photography can help, but even with image enhancement it often misses subtle details and tells us little about the materials used.

To overcome this, we are exploring the use of hyperspectral imaging, a technique which captures not only of the colours we can see, but also details those invisible to the naked eye, such as faint or hidden painted layers and chemical information about the pigments. The method is completely non-invasive and requires only a portable camera and sunlight.

Each image contains a huge amount of data, so we work with data scientists at Melbourne Data Analytics Platform to help us make sense of it.

We are testing this approach on the large painting sequences at Pundawar Manbur, Kwini Country. By 'virtually untangling' the layers of paint, we can potentially distinguish materials, reveal hidden artworks, and understand more about the order in which paintings were made – allowing us to 'see through time'.

This research reveals new ways to explore, interpret, and share the histories of painted rock art.



11:45 - 12:45 PM

Group Leaders:
Group 1 - Rachel Popelka-Filcoff
Group 2 - Bastien Llamas
Group 3 - Faris Ruzain
Group 4 - Tristen Jones
Group 5 - Marina Mitsopoulos
Group 6 - Theresa Dixon
Group 7 - Michael Petraglia

"Pitch Your Research" Challenge

Researchers (and their teams) deliver an elevator pitch to groups which include: RAA Board, SAC, Indigenous partners, students, and collaborators.

A spokesperson from each group shares the key research points with everyone.

The researcher reports back on the most useful feedback received about their pitch.

12:45 - 1:45 PM

Lunch and Poster walk

1:45 - 2:00 PM

Re-cap "Pitch Your Research"

2:00 -2:15 PM

Belinda Martin (Flinders University)

From Microbes to Minerals: Stories locked in rock art coatings

Microbes, microscopic organisms such as bacteria, fungi and archaea, exist everywhere; on and in every surface you can imagine. They exist as communities of millions of species working together that influence all environments, including helping plants grow, helping us digest food, building unique structures, and maintaining balance in the environment.

We wanted to understand what microbes were present in the Kimberley cave systems, how they survive this extreme environment, and how they interact to facilitate the production of the iconic calcium oxalate glazes.

The way these glazes form are largely unknown and as a natural formation they are complex, with layers that are deposited over time.

We took internal and surface samples of both the sandstone and the glaze from 10 cave systems to determine what microbes have been historically present (the internal community) and what microbes are 'active' (the surface community) that facilitate glaze formation.

By comparing the microbes from the surface and internal communities, and between the sandstone and glaze, we identified the specific microbes involved in glaze formation and are discovering ways these microbes interact with the Kimberley environment.

2:15 - 2:30 PM

Kasih Norman (Griffith University)

Human Response to Dramatic Post-Ice Age Climate Change: Survey results from Java and Madura Islands, Indonesia.

This project explores how people responded to one of the most dramatic environmental changes in human history: the rapid rise of sea levels at the end of the Ice Age. Between about 15,000 and 8,000 years ago, melting ice sheets flooded huge areas of land in Indonesia and Australia, breaking apart the ancient continent of Sunda into the islands of Indonesia, and drowning the vast continental shelves of northern Australia. **These changes forced ancient people to migrate, adapt, and invent new ways of living.**

By comparing this project in South Kalimantan (Borneo) and Madura Island with research in Arnhem Land (Northern Australia), this project brings together Indonesian and Australian perspectives on human resilience. In both regions, people faced the rapid loss of landscapes, shrinking coastlines, and the need to reconfigure how they lived. Working with Indonesian partners and Indigenous custodians in Australia, we use minimally invasive methods—such as ground-penetrating radar and coring—to locate ancient sites. These will guide future excavations of rock art, tools, and other traces of cultural innovation.

By linking findings from Indonesia and Australia, we aim to understand how humans survived catastrophic land loss, migration pressures, and social upheaval. These lessons offer valuable insights for thinking about resilience in today's era of accelerating climate change.

RAA Community Outreach Projects

2:30-3:00 PM

Ainslie Donation and Ian Waina
Paul Hartley (Outdoor School, DET Vic)
Tony Keeble (School for Student Leadership)

Kalumburu Women's Cultural Education Engagement

After ten years supporting Rock Art Australia's field research and six years of running secondary education programs in the Kimberley, our team developed a new education partnership with Cultural Leaders Dorothy Djangara, Bernadette Waina, and Ainslie Donation from Kalumburu Community. Together, we created an innovative learning experience that brought together on-Country cultural education and scientific research supported by Rock Art Australia.

Our shared goal was to design learning experiences that allowed Local Elders to teach in their own ways, sharing knowledge, stories, and perspectives in ways that best represent Aboriginal ways of learning, knowing, and being.

As educators, our role was to help create the setting and framework for these experiences, then step back and allow this process to unfold naturally. For students, this approach led to powerful, co-designed learning opportunities. Their growing understanding was captured in a 2 x 5 metre "Pathways" concept map, which illustrates how their thinking developed around the connections between Art, Culture, History, and Reconciliation. The teachings shared by Dorothy, Bernadette, and Ainslie had a deep and lasting impact on students' understanding of these relationships and their relevance to contemporary Australia.

3:00 - 3:15 PM
Amos Smith (Balanggarra AC) and Donny Imberlong

Healthy Country, Healthy Communities: Why Access to Country Matters for Wellbeing

In this session, we want to share an idea for how future RAA projects could help us better understand, and better support, the mental health and wellbeing benefits that come from spending time on Country. Many people across northern Australia talk about feeling calmer, stronger, and more grounded when they return to the places they belong.

RAA supported fieldwork creates important opportunities for people to be on Country through rock art and archaeological projects. At the same time, access can still be difficult for some groups. In the North Kimberley, remoteness, travel costs, and the condition of tracks-especially the Oombulgurri road-make it hard for families to reach their homelands regularly.

We think a future study could run alongside existing RAA field programs to explore these wellbeing benefits in more detail and to document the barriers that limit access. Importantly, it could also look at practical and innovative ways to help Traditional Owners get back to Country more often.

By exploring this, we can support the strong connection between healthy Country and healthy communities.

3:15-4:00 PM

Afternoon Tea

Groups split in half for Afternoon Tea and VR

Louise Shewan (UoM), Ian Waina

Kimberley Rock Art Virtual Reality (VR): Program for immersive learning, research, conservation and engagement.

The Virtual Reality (VR) project is designed to create an accessible, interactive, 3D environment to experience the exceptional rock art of the Kimberley and to enhance teaching and learning outcomes, research, conservation and outreach. Over two field seasons we have collected and processed thousands of photographs of Kimberley rock art to generate high-resolution, multi-purpose, geolocated, 3D models in extraordinary detail and with accurate colour.

The models are viewable on desktops and VR display devices such as ClassVR and Meta Quest. ClassVR headsets are tailored for school use and deployment in the field, while Meta Quest devices support research and museum applications. Content for Meta Quest headsets is delivered via our "chARt-VR" app, which supports higher-resolution models and includes soundtracks, interactive information panels and narration.

This year, we delivered 12 VR headsets kindly donated by Rock Art Australia to the Kalumburu Remote Community School, enabling students and teachers to view 360-degree movies and 3D models of Kimberley rock art in an immersive learning environment. Activity sheets were developed to support curriculum integration and enhance learning outcomes.

Future research

4:00 PM - 4:45 PM

3 x 15-minute Lightning Presentations

4:00-4:15 PM
Phil Riris (Uni Bournemouth)

Rock art for insights into past ecological diversity

I aim to propose the rock art record as a potential source of information on past ecosystems, focusing especially on depictions of animals. Rock art is widespread worldwide and spans at least the last 50,000 years of human history, providing imagery that is completely unavailable elsewhere.

Researchers are increasingly turning to historical artworks for insights into past global change. Examples include depictions of species introductions, extinctions, land use change, and climate at the time of creation. I argue that the large-scale, comparative analysis of rock art has valuable contributions to make in closely related areas.

Analyses of animals in rock art has shifted considerably from primitivist and proto-religious explanations through functionalist, interpretative and, latterly, to post-human and -colonial frameworks. It is clear that rock art provides neither a "menu" nor a checklist, but, at the same time, that its creation was deeply informed by the ecology of past artists.

Drawing on analogous work across the sciences and humanities, I will highlight a number of the barriers currently faced by rock art research, and argue that these ought to be treated as programmatic research problems in their own right.

4:15-4:30 PM
Sam Harper (UWA)

Where to next?
Big datasets and community priorities

Work with Balanggarra and Kwini people across their determination in the NE Kimberley has seen many large RAA- supported projects flourish, including Kimberley Visions, Kimberley Rock Art Dating and the Cockburn Ranges seed-funded project, over the last decade.

The data generated through these projects is immense, and has resulted in numerous academic outputs, with direct application for land management of cultural places by Balanggarra ranger teams.

With the direction of Balanggarra and Kwini people's leadership, and focused on community benefit, bringing together this data with other legacy datasets has the potential to explore more of the big questions around how rock art maps stories, including how it has been used to manage and reflect changing climate through time.

In building future research and management with Balanggarra, key factors will be around capacity building with on-Country training, intergenerational knowledge transfer, and two-way delivery of research outputs.

4:30 - 4:45 PM
Dawn Lewis (University of Adelaide)

Paleogenomic Perspectives on Indigenous Australian Rock Art and Cultural Landscapes.

DNA is found in all plants, people, animals, and microbes. Technological advances have given us unique ways to look at the DNA that makes up individual species (genomes) and communities of species (metagenomes), even from archaeological and palaeontological material. The latter is possible by looking for ancient DNA still within bone or other preserved tissues, and we can also look at free DNA that gets bound on sediments.

By extracting the modern and ancient DNA we find at rock art sites, we can identify the presence of people in the past, historic changes in the environment, and track current biodiversity.

This gives us powerful new lines of evidence that complement existing approaches in caring for Country including rock art research and conservation.

We aim to use both modern and ancient DNA studies to investigate the archaeological history and conservation of given sites.

4:45 - 5:00 PM
Ken Wyatt and Helen Green

Closing Remarks