



MACQUARIE  
University

# CACHE

CENTRE FOR ANCIENT CULTURAL HERITAGE AND ENVIRONMENT

# Matters

E-ZINE 2019



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Further information about new projects, new people, and events for 2020, as well as the CACHE Blog, can be found on our website: <https://www.mq.edu.au/research/research-centres-groups-and-facilities/resilient-societies/centres/cache>

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Centre for  
Ancient  
Cultural  
Heritage and  
Environment

## Message from the Deputy Vice-Chancellor, Research

### Professor Sakkie Pretorius



In the recent 2020 QS Rankings at subject level, Classics and Ancient History has entered the top 50 in the world with a stellar ranking of 44! Macquarie is the only Australian University ranked in the Top 50. This is an exceptional result for our University and is testament to the calibre of research being undertaken by the team in the Centre for Ancient Cultural Heritage and Environment (CACHE). We are all very excited about this achievement and the impact it will enable the CACHE team to have on the discipline and wider society. This is real evidence of World-leading research with World-changing impact.

## Message from the Pro Vice-Chancellor, Research Performance

### Professor Amanda Barnier



Macquarie University Research Centre status is given only to the most high performing groups of researchers and practitioners with the potential for national and international success. Over 35 staff members from two Faculties and six Departments across the University are engaged in research as part of CACHE. In its inaugural year, members of this large and highly productive interdisciplinary group have won significant new competitive funding, developed important national and international collaborations, supervised and mentored a large pool of higher degree research students and early career colleagues, and been rewarded with prestigious fellowships and prizes. Of course, this Centre is just the latest incarnation in a long and distinguished history of excellence in both ancient history and environmental sciences at Macquarie. But CACHE offers a distinctive new approach, combining the perspectives and talents of researchers from the humanities and the sciences to show how lessons from the ancient world can inform 21st century challenges. I look forward to working closely with CACHE to further their 2019 successes and support their aspirations for the future.

## Announcement

### New leadership from mid-2020

From June 2020, Associate Professor Ronika Power (Ancient History, Macquarie University) will assume the Directorship of CACHE. Dr Emilie Ens (Environmental Studies, Macquarie University) and Dr Karin Sowada (Ancient History, Macquarie University) will join her as Deputy Directors. We thank Professor Bronwen Neil for her efforts in establishing CACHE and guiding the Centre through its first year, and look forward to continuing the work under the new leadership team.



#### Director

Associate Professor Ronika Power (Ancient History, Macquarie University)

#### Deputy Directors

Dr Emilie Ens (Earth and Environmental Sciences, Macquarie University)

Dr Karin Sowada (Ancient History, Macquarie University)

Top: Professor Sakkie Pretorius, Deputy Vice-Chancellor, Research, Macquarie University. Credit: [Macquarie University](#).

Middle: Professor Amanda Barnier, Pro-Vice Chancellor, Research Performance, Macquarie University. Credit: A. Barnier.

Bottom: (L-R) Associate Professor Ronika Power, Dr Emilie Ens, Dr Karin Sowada, Macquarie University. Credit: [Macquarie University](#).

# Director's Report

## Professor Bronwen Neil, Ancient History

*As outgoing director of Macquarie University's Centre for Ancient Cultural Heritage and Environment, it is my pleasure to offer a brief summary of events, plans, external funding, and projects commenced in the 17 months since CACHE's inception.*

### CACHE-funded projects in 2020

Dr Fred Hardtke (Ancient History) and I are convening a symposium on *Humans in Deserts – Stories of Exploration and Survival*. This event will consider how humans in ancient times were able to survive in, but at the same time exploit, deserts and arid environments. The symposium has been deferred from May 2020 by COVID-19 but will be held either digitally or face-to-face in S2 2020 or S1 2021. Dr Hardtke has also done the hard yards of planning for the *Living Digital Heritage* conference, which we plan to hold on 10–12 October 2020 at Macquarie University, circumstances permitting. All are welcome! Please see the [event website](#) for further information.

Cross-cultural ecologist Dr Emilie Ems (Earth and Environmental Sciences) continues to undertake biological fieldwork in Arnhem Land and was awarded \$4000 to continue this important work relating to our first research stream, 'Humans and their Environments', along with other CACHE members in Environmental and Earth Sciences. Indigenous Australian environmental management will be a strong focus of CACHE collaborations going forward, building on the success of Associate Professor Ronika Power's *Exploring the Past with Data* workshop last November (see the interview with Phil Duncan of Walanga Muru, pp. 4–5).

Professor Malcolm Choat (Arts) and Dr Rachel Yuen-Collingridge (Ancient History) have continued their *Markers of Authenticity* project and will receive CACHE funding for a data-captured seminar in S2 (see report on pp. 10). This will involve doctoral and postdoctoral participation and relates



to our research stream 'Reception of the Ancient World'.

A grant of \$5700 has been awarded to Egyptologist and CACHE member Dr Alex Woods (Ancient History) for her digitisation of Beni Hassan material held by the Griffith Institute Archive, part of Oxford University. We congratulate Alex on making an agreement to digitise and publish this material. The work will be undertaken at Oxford by Macquarie University PhD graduates in ancient Egyptian art history, thus building our research capacity.

We will welcome Associate Professor George Steiris to Sydney later this year as a CACHE academic visitor. Professor Steiris, Dr Ken Parry (Ancient History) and Associate Professor Eva Anagnostou-Laoutides (Ancient History) are working on a proposal to the Stavros Niarchos Foundation to support a new international research centre in Byzantine philosophy.

CACHE is funding four postdoctoral fellows from Oxford, Cambridge, Helsinki, and Sydney up to \$5000 each to establish or continue research collaborations with CACHE members at Macquarie University. We look forward to welcoming these fellows at the end of 2020. They will be housed in the new CACHE office space in the Arts Precinct.

### External funding

CACHE members had two new ARC Discovery Project grants awarded in December 2019, both related to our 'Leadership and Legacy' stream (see details on p. 7). Associate Professor Anagnostou-Laoutides and I were awarded \$496,000 for our

*Above: Professor Bronwen Neil, CACHE Director, Macquarie University.  
Credit: B. Neil.*

project 'Crises of leadership in the eastern Roman Empire (250–1000 CE)'. CACHE member **Professor Ian Worthington** (Ancient History) and Associate Professor David Pritchard (University of Queensland) received DP funding for their project 'From where the fine warships come: Democratic Athens at war'.

**Dr Emilie Ens**, **Professor Damian Gore**, **Dr Tim Ralph** et al. have been awarded an ARC Linkage Project to answer the research question: 'Can tropical coastal floodplains survive feral ungulates and rising seas in north Australia?' The three-year project involves Indigenous participation and the team includes rangers, anthropologists, and environmental scientists. ARC Linkage Projects on the 'Heritage and history of de-industrialisation in the Blue Mountains', and 'Understanding long-term environmental and cultural evolution in Thrace', are also under review at present round, as well as two ARC Strategic Research Initiative grants, one on 'Indigenous foodways in Australia' by **Associate Professor Shawn Ross** et al., following on from his LP held by the University of New England on Indigenous foodways in colonial Cape York Peninsula (2018–2020). The other SRI, submitted by **Dr Emilie Ens**, would fund a Macquarie University postdoc to help manage our highly successful cross-cultural biodiversity research in east Arnhem Land. This round of ARC SRI funding is directed to projects on Australian History, Society and Culture, for up to \$100,000 over three years. I wish all the CACHE applicants well with their applications.

Over the course of 2019, **Dr Gil Davis** (Ancient History) successfully negotiated with the Education Heritage Foundation for a generous donation of \$400,000 over three years to fund the inaugural Khirbet el-Rai postdoctoral fellowship in archaeological science. Special congratulations to the newly appointed postdoctoral fellow **Dr Sophia Aharonovich**, who will be based in Israel and will bring her research on the Khirbet el-Rai dig in mid-2020 (see her profile on p. 8).

### **CACHE High Degree Researchers and Early Career Researchers**

Two more archaeological scientists have joined CACHE in the past 6 months: **Dr Anna Latifa-Mourad**, a Macquarie University Research Fellow in Egyptology, started in September 2019 (see her profile on p. 8) and **Dr Camilla Di Biase-Dyson**, who was already a CACHE ECR affiliate and has joined the Department of Ancient History from Germany.

Five HDRs on CACHE topics in environment, leadership, and reception of the ancient world are on track to complete their

theses in 2020. Another three graduated in April this year. Plans for another HDR event like the *Mentoring Kickstarter* held last November (see p. 11) are in train. Several ECR affiliates have joined us from the cohort of Macquarie University's HDR graduates and further afield. We welcome them and thank them for their contribution in mentoring CACHE-affiliated HDRs.

### **New leadership team**

From July 2020, we are pleased to welcome a new leadership team, in **Associate Professor Ronika Power** (Director, Superstar of STEM, Ancient History), **Dr Emilie Ens** (Deputy Director, Environmental and Earth Sciences), and **Dr Karin Sowada** (Deputy Director, Ancient History). I would like to thank these three amazing women for agreeing to take on these challenging roles with a minimum of coercion. Meanwhile, I will be seconded to the Australian Research Council as Executive Director for Humanities and Creative Arts. I would also like to thank all our members and affiliates, our executive and advisory board, our HDRs and postdocs, for their contributions of time, energy and enthusiasm in the last 18 months as we have sought to carve out a niche for an original and dynamic university research centre which incorporates Australian Indigenous cultures in its definition of the ancient world. We are grateful to the DVCR's office for extending our initial University funding of \$50,000 in 2019 to pursue CACHE's goals this year.

**Dr Alice McClymont** (Ancient History) and **Natalie Mylonas** (Ancient History) have continued their sterling work for CACHE as operations manager and communications officer, respectively. We thank them both for their efforts to keep the executive in line and impose some order on our creative impulses. Natalie will be stepping down from the role mid-year in order to complete her doctoral thesis, and we are looking for a replacement. Thanks to both Alice and Nat for producing the inaugural volume of *CACHE Matters*.

### **Staying in touch**

Finally, thanks to you for reading this quick round-up of CACHE's current activities. These are only some of the highlights, and much more is going on behind the scenes. If you would like to be involved, or to apply for funding for a collaborative project or event that builds research capacity in the areas of ancient cultural heritage and environment studies, please contact the Director or Deputy Directors, via [cache@mq.edu.au](mailto:cache@mq.edu.au). If you simply want to know more about what's going on, please see our [website](#).

**Together, we can activate knowledge of the past to better understand the challenges of the present and bring the past to life for the future.**

# Q&A

## Phil Duncan, Walanga Muru

*Phil Duncan, CACHE member and Aboriginal Cultural Training Coordinator in Walanga Muru, speaks about the inclusion of Indigenous cultural science in CACHE*

*Interviewed by Alice McClymont and Natalie Mylonas*

**Thank you very much for agreeing to this interview. How did your involvement with CACHE come about?**

It was a direct result of the Manawari Cultural Safety Training for Macquarie University staff. I have the wonderful opportunity to be the facilitator of that training and it's pretty special to be thought of in such terms that people feel that you can make a difference and add value. To my own surprise I feel like I have. Relationships are so important when it comes to opportunities that arise like this. Those relationships turn into friendships out of pure respect. I often feel pretty humbled about my world as it's changed since coming to Macquarie University. My gravitation into being an executive member of CACHE as an Aboriginal person today has been extremely rewarding and I learn more everyday.

**It's rewarding for CACHE as well to have expanded in this more culturally inclusive direction. In becoming a member of the Centre, did you undertake any CACHE-sponsored activities last year?**

CACHE supported me so that I could go to two events. I had been previously attending meetings and conferences on my own steam because I'm not an academic. CACHE supported me so I could go to the Native American and Indigenous Studies Association conference, which is the largest scholarly organisation devoted to critical Indigenous Studies. It was extremely rewarding and a wonderful learning experience, but it didn't pique my interest in becoming an academic, I was never terribly good at school. I was also a keynote speaker at the Waikato Tainui River Symposium. I wouldn't have been able to get there without the support of CACHE.

**Did the River Symposium have a more environmental focus?**

It was about freshwater ecology. When I say I don't have a degree I'm very comfortable with what I call my cultural degree and those cultural learnings. I have a great understanding of my cultural landscapes and the importance



of rivers and those ecosystems around freshwater, around native fish, and around wetlands. To be able to realise the opportunity to be a keynote speaker on an international stage wouldn't have happened without CACHE.

**What is the importance and benefit of collaboration between Indigenous cultural science and the various disciplines involved with CACHE?**

I think we are living in a wonderful world where the uptake of Indigenous knowledge and value into scientific research is going to the next level. There's this new and emerging theme called "Nothing About Us Without Us" in the scientific world around the incorporation of Indigenous knowledges. I think the Universities Australia report back in 2014–2015 and the uptake of what they call the Indigenous Connective Curriculum Project, where you interweave Indigenous cultural knowledges into the teaching and into research, has been wonderful. For us as an indigenous society to realise our full potential we need to have strong, sustainable working collaborations that lead to partnerships, relationships, and friendships. Those quality interactions on country has and will continue to help shape and redefine policies both social and scientific. We've already seen a change in legislation to include Indigenous people and our rights to hunt and gather and be involved in the repair of country as well. For us to realise our full potential and continue to have the opportunity to raise our voices in the scientific arena and collaborations are so important going into the future.

**Macquarie is moving in the right direction. Curricula have to incorporate elements of Indigenous cultural science, which will hopefully mean that more HDR students will be interested in exploring that**

**aspect of research in the future. One concern is that collaborations will not be genuinely productive due to the unfamiliarity of some researchers with the Indigenous community. How do you think we can get past some of those difficulties?**

Having the opportunity to influence our next generation of scientists and academics such as yourselves should not be lost in this opportunity. Working in a tertiary institution and having the opportunity to get the next generations to question the scientific platforms and how we can do business better with Indigenous people is refreshing. That's what science is about, it's there to be challenged. Yes, in the early stages back in the day we had our lecturers and professors tell us, 'This is what works' and now young people are saying, 'No I want to do it my way' and they are able to get through all the processes like ethics etc. to get onto country.

**You mentioned in one of our CACHE meetings that the majority of the Indigenous population is under 25.<sup>1</sup> What are the implications of this?**

The next generation are into social media, they're not into our culture as much as when I was growing up. There is so much value in immersing yourself in Indigenous culture and it can assist in finding oneself and from an Aboriginal perspective, your true place. I know my true place in relation to my family, clan, my community, and my nation. Sadly, a lot of the younger generation are falling through the gaps. To continue to be able to influence the scientific and research world, like yourselves, to be our champions for the future, is a wonderful opportunity I have. I'm grateful every day to be able to wake up and go to a university that is ever evolving in the Indigenous space. I see Macquarie University having a huge window of potential to become the tertiary education institute of Indigenous excellence. We are doing so much better with the Indigenous strategy, the uptake of including Indigenous knowledge into curricula, the work force planning, student engagement. We are never going to have a campus that is going to be safe for everybody, but we work hard at it.

**What projects within CACHE are already working to drive the collaborative effort between Indigenous cultural science and other disciplines?**

CACHE is already doing this through the courageous conversations we have as in the Executive Committee. There is a great desire to have better collaborations and support in the funding applications that are put to the Executive Committee that have a significant Indigenous component to what they want to do. To have CACHE as a mechanism to do that is wonderful.

**You participated in CACHE's 2019 Exploring the Past with Data Workshop, convened by Dr Ronika Power. How did you find that experience?**

That was one of the most rewarding days I've spent at Macquarie University. The networking afterwards was excellent, everywhere people were talking. I had a great opportunity to sit with three of the young students that attended and they were saying 'I want to get into a community where I can work with Indigenous people.' You can't buy that type of feel good stuff.

**One focus of CACHE's research is 'Humans in their Ancient Urban and Natural Environments' and we have a workshop planned in 2020 on humans in deserts, to be convened by Dr Fred Hardtke (Ancient History). What are the opportunities for collaboration in this area?**

That is an area we should gravitate into very quickly. The changing landscape due to climate change, the impacts on cultural heritage, and simple things like biosecurity of our traditional foods are at risk. We need to continue to coexist in a symbiotic way with our cultural landscapes and to live in a world that isn't our cultural world. For too long there has been a separation between "western" science and cultural science. There's a wonderful opportunity now to integrate our personal and cultural values. People should not underestimate how much commitment and purpose they have towards the continued revitalisation and teaching of Indigenous values. The cultural knowledge of the desert mob is particularly at risk of being lost because the more remote and isolated you are, the less you're thought of.

**Do you have any advice for how CACHE members can collaborate respectfully and effectively with Indigenous knowledge bearers?**

I think that we have to look at a strategic and a communication plan that can support that strategy and identify key areas within our university. Walanga Muru already have an engagement strategy that is brand compliant with the University; perhaps CACHE could make use of that. I think we also need to support people to be more courageous and dip their toe in that area.

**Yes definitely. There is a lot of good will amongst the members of CACHE but we don't have that knowledge, you're an example of someone who does have that knowledge. Dr Emilie Ens (Earth and Environmental Sciences) is another person who has worked with Indigenous communities and has ideas about how to collaborate respectfully and effectively with indigenous knowledge bearers.**

People like Emilie are testimony to one's growth and what can be achieved. Macquarie's environmental sciences researchers are internationally recognised for what they do. CACHE has a wonderful opportunity to be involved with that.

**Absolutely. Thank you for your thoughtful responses.**

<sup>1</sup> The 2016 Census recorded that 53% of Aboriginal and Torres Strait Islander people were under 25, in comparison to 31% of non-Indigenous people. [Australian Bureau of Statistics cat. no. 2071.0.](#)

# Publication highlights

*Research by CACHE members resulted in over 25 publications between January and December 2019*

## Books

### Javier Alvarez-Mon

*The monumental reliefs of the Elamite highlands: a complete inventory and analysis (from the seventeenth to the sixth century BC)*, Mesopotamian Civilizations 22 (University Park, PA: Eisenbrauns, 2019).

### Caillan Davenport

*A history of the Roman equestrian order* (Cambridge: Cambridge University Press, 2019).

### Paul McKechnie

*Christianizing Asia Minor: Conversion, communities, and social change in the pre-Constantinian era* (New York: Cambridge University Press, 2019).

### Bronwen Neil

with Doru Costache and Kevin Wagner, *Dreams, virtue and divine knowledge in early Christian Egypt* (Cambridge: Cambridge University Press, 2019).

## Book chapters

### Malcolm Choat

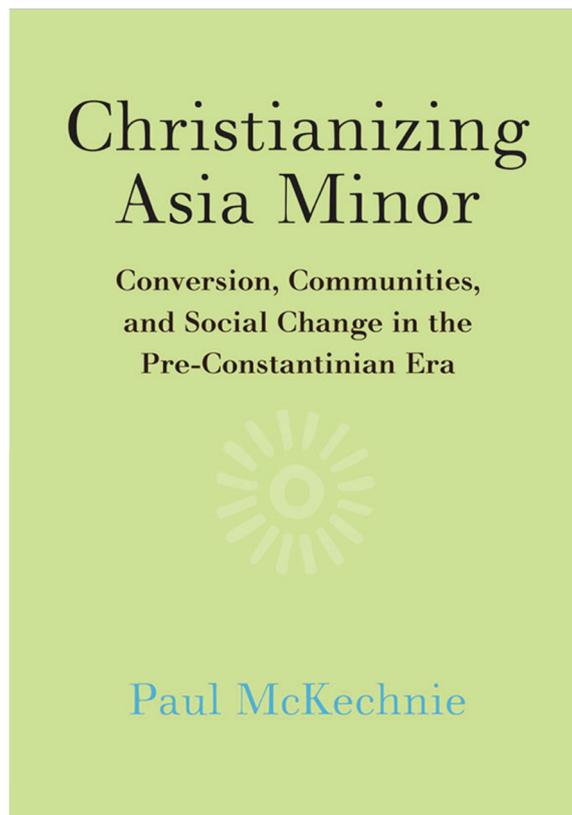
'Gnostic elements in ancient magical papyri', in Garry W. Trompf, Gunner B. Mikkelsen & Jay Johnston (eds), *The Gnostic world* (London & New York: Routledge & Taylor and Francis Group), 217–224.

### Peter Edwell

'Palmyra between Rome and the Parthians' in Anne-Marie Neilsen and Rubina Raja (eds), *The Road to Palmyra* (Copenhagen: NY Carlsberg Glyptotek), 109–126.

### Ken Sheedy

'Archaic Athenian electrum coinage', in Ute Wartenberg and Peter van Alfen (eds), *White gold: Studies in early electrum coinage* (New York: The American Numismatic Society, 2019), 59–90.



## Journal articles

### Malcolm Choat

'Dating papyri: familiarity, instinct and guesswork', *Journal for the Study of the New Testament* 42:1 (2019), 58–83.

### Emilie Ens

with Daniel R. Sloane, Jimmy Wunungmurra, Andrew Falk, Gurrundul Marika, Mungurrabin Maymuru, Gillian Towler, Dave Preece, and Yirralka Rangers, 'Western and Indigenous knowledge converge to explain Melaleuca forest dieback on Aboriginal land in northern Australia', *Marine and Freshwater Research* 70:1 (2019), 125–139.

### Linda Evans

with Philip Weinstein. 'Ancient Egyptians' atypical relationship with invertebrates', *Society & Animals* 27:7 (2019), 716–732.

### Damian Gore

with Blanca Figuerola, Glenn Johnstone and Jonathan S. Stark, 'Spatio-temporal variation of skeletal Mg-calcite in Antarctic marine calcifiers', *PLoS ONE* 14:5 (2019), 1–18, DOI [10.1371/journal.pone.0210231](https://doi.org/10.1371/journal.pone.0210231).

### Tim Ralph

with Bradley P. Graves, Paul P. Hesse, and Kira E. Westaway, 'Macro-charcoal accumulation in floodplain wetlands: Problems and prospects for reconstruction of fire regimes and environmental conditions', *PLoS ONE* 14:10 (2019), 1–33, DOI [10.1371/journal.pone.0224011](https://doi.org/10.1371/journal.pone.0224011).

### Karin Sowada

with Mary Ownby and Anna Wodzińska, 'The petrography of imported Levantine Combed vessels from early Old Kingdom Giza', *Levant* (2019), DOI [10.1080/00758914.2019.1664197](https://doi.org/10.1080/00758914.2019.1664197).

# Funding & excellence

*CACHE members received internal and external funding and recognition for their research in 2019*

In our inaugural year, CACHE's membership carried out a number of new and ongoing research activities that have been generously supported and recognised by both national and international bodies. Here, we acknowledge new grants, collaborations, and awards from 2019 that showcase the diverse projects and excellence of our researchers.

## Grants

Two prestigious ARC Discovery Project grants were awarded. **Professor Malcolm Choat** (Arts) and **Professor Damian Gore** (Earth and Environmental Sciences), together with Dr Rodney Ast (University of Heidelberg), were awarded \$286,000 for their project 'Ancient Egyptian papyri: Unlocking secrets to the history of writing' (2019–2021). This interdisciplinary project will apply light analysis to determine the mineral composition of inks on ancient Egyptian papyri, with a view to establishing where those inks were made. This follows on from Professor Choat and Dr Ast's previous ARC DP 'Forging antiquity: Authenticity, forgery and fake papyri', which concluded in 2019. CACHE Director **Professor Bronwen Neil** (Ancient History), **Dr Evangelina Anagnostou-Laoutides** (Ancient History) and Professor Theodore de Bruyn (University of Ottawa) were awarded \$496,000 for their project 'Crises of leadership in the eastern Roman Empire (250–1000 CE)' (2020–2022). The project will explore the practical and rhetorical response of Late Antique Roman leaders to crisis situations, potentially providing helpful and timely models for current leadership. Professor Neil is also Chief Investigator on a second ARC DP 'Memories of Utopia: Destroying the past to create the future (300–650CE)' (2017–2020), together with colleagues from the University of Divinity and Australian Catholic University.

CACHE was a named partner alongside Flinders University and Harvard University on a New Colombo Plan Mobility Award, a government program that funds study and practicums for Australian university students in the Indo-



Pacific region. The award will allow students to take part in the Kullu-Spiti Crossroads Field Program run by the Himalaya Heritage Interdisciplinary Field School, an ancient cultural heritage excavation in the foothills of India.

## Fellowships

Several of CACHE's members were granted fellowships at international universities. **Professor Bronwen Neil** received a three-month fellowship at the Institute of Advanced Research at Durham University, taken up in early 2020, while **Dr Caillan Davenport** (Ancient History) was awarded an 18-month Von Humboldt Fellowship for Experienced Researchers at Goethe University, Frankfurt-am-Main (2019–2021), to work on his project 'Talking about Roman Emperors: Understanding Imperial Rumour and Gossip from the Principate to Late Antiquity'.

## Awards

**Associate Professor Ronika Power** (Ancient History) received wide-ranging recognition for her work in bioarchaeology, including a New South Wales Tall Poppy Award for Science, the Australian Academy of Humanities Max Crawford Medal for Early Career Researchers, the Kwang-Soo Lim Early Career Award from the Union Académique Internationale (Paris), and admission to the Society of Antiquaries (London).

**Professor Malcolm Choat** was admitted to the Australian Academy of Humanities in November 2019 after being elected the previous year. **Professor Ray Laurence** (Ancient History) and **Associate Professor Ronika Power** were also elected as Fellows of the Royal Society of New South Wales, while **Professor Ian Worthington** (Ancient History) was elected as Fellow of the Royal Historical Society (London).

# Early Career Researcher profiles

## *CACHE welcomes two new ECR members*

### **Sophia Aharonovich**

Dr Sophia Aharonovich is CACHE's new Postdoctoral Research Fellow in Ancient Israel Archaeology. She received her BSc (2010) in Biochemical Engineering from the Technion–Israel Institute of Technology, Israel and her MA (2012) in Archaeology from the University of Haifa, Israel under the supervision of Professor Mina Weinstein-Evron, during which she specialized in middle Paleolithic paleoclimate variations. She pursued her PhD studies at Macquarie University under the supervision of Professor Simon George, reconstructing variations in global climate during the Miocene Period (32–5 million years ago), working on biomarkers from deep ocean drilling core samples from the Southern-Pacific, Indian, and Atlantic oceans.

Dr Aharonovich is a member of the Khirbet el-Rai excavation project, co-leading the 2019 season and participating in the 2020 expedition under Dr Gil Davis and Dr Kyle Keimer. She set up a unique onsite analytical field laboratory with financial support from the Wakil family, donors to the Ancient Israel Program, in order to undertake comprehensive soil sampling during the excavations and introduce the basics of soil chemistry to undergraduate students. Her field research was focused on obtaining an understanding of the daily activities of the site's inhabitants during the King David period from the organic residue data.

Dr Aharonovich has received several international scholarships including the Organic Geochemistry International Elsevier Scholarship (2015) as well as multiple highly competitive research grants, such as the Australian and New Zealand International Ocean Discovery Consortium (ANZIC) post-cruise funding. She was also the only Australian scientist on board of JOIDES Resolution during the 355 IODP Expedition in Indian Ocean (2015).

During her Post-Doctoral Research Fellowship, Dr Aharonovich will work on forensic analysis of biblical period sediments and pottery, analysing organic residue, pollen grains and phytoliths. She will use her research to bring some taste, smell and colour to daily life in the biblical period. Her postdoctoral fellowship is fully funded by the Education Heritage Foundation for three years.

*Above left: Sophia Aharonovich, Department of Ancient History, Macquarie University. Credit: J. Stephan.*

*Above right: Anna-Latifa Mourad, Department of Ancient History, Macquarie University. Credit: A.-L. Mourad.*



### **Anna-Latifa Mourad**

Dr Anna-Latifa Mourad is a recipient of the highly competitive Macquarie University Research Fellowship. She returns to the university, where she completed her PhD in 2014 on Egyptian-Levantine relations in the Middle Bronze Age, after three years at the Austrian Academy of Sciences, Vienna. Dr Mourad was part of the multidisciplinary European Research Council Advanced Grant project 'The enigma of the Hyksos', directed by Professor Manfred Bietak, in which she led the Multidirectional Cultural Interference Studies research track.

Her MQRF project, titled 'The ties that bind: Negotiating foreign relations in the second millennium BC', assesses networks of contact and exchange in ancient Egypt and the Near East. The first half of the second millennium BC (ca 2000–1400 BC) witnessed the rise and fall of several powers across Egypt and the Near East, major climatic disturbances, migrations, and technological advancements. However, it also coincided with the punctuated yet continuous growth of a dynamic network that resulted in the first known 'International Age'. By examining this period through an interdisciplinary approach combining archaeology, ancient history, and current anthropological and sociological theories on transformation, Dr Mourad hopes to propose new insights into how prosperous networks emerged and persisted across changing socio-cultural landscapes. Ultimately, this project will add to our understanding of human connections, and how we can foster strong ties beyond borders, in an increasingly interconnected world.

Dr Mourad's other research interests include Old and Middle Kingdom tomb art and architecture, as well as digital epigraphic and archaeological technologies. She has worked on two archaeological expeditions in Egypt, at the sites of Saqqara and Beni Hassan. Dr Mourad is also the Department of Ancient History representative in the Macquarie ECR Network, through which she helps to connect and support fellow postdoctoral researchers.

# Conferences, workshops & seminars

*Members of CACHE convened national and international conferences and workshops in 2019*

## Egyptology Symposia (28 February, 30 August)

The Australian Centre for Egyptology (ACE), with the generous support of CACHE, held two symposia over the course of 2019. Both events were organised around visits by international scholars, and involved contributions from these visitors as well as students and ACE affiliates.

The first symposium, *New Perspectives on Ritual Landscapes in Ancient Egypt: Challenges and Opportunities*, was held in February 2019 and convened by CACHE members **Dr Alex Woods** and **Dr Karin Sowada** (Ancient History, Macquarie University). The keynote paper was given by Professor Miroslav Bárta, who spoke on agency and form in the Old Kingdom tombs. Professor Bárta highlighted the ritual and social function of cemetery landscape and architecture in Abusir and Saqqara. Additional presentations were made by HDR students Georgia Barker, Genevieve Holt, Nicolle Leary, as well as Dr V. Gae Callender (Charles University, Prague) and Dr Alice McClymont (Ancient History, Macquarie University), drawing connections between sacred spaces, art, and writing, and how these were impacted over time.

The second symposium, *Applying New Methodologies and Rediscovering Old Sources*, was held in August in honour of the 2019 Gale Visiting Scholars Professor Peter Brand (University of Memphis) and Professor Patrizia Piacentini (University of Milan). This event was convened by CACHE members **Dr Karin Sowada**, **Associate Professor Boyo Ockinga**, and **Dr Alice McClymont**, and highlighted the contribution of both new methodologies and old archival data to the study of Egyptology. While Professor Brand presented the University of Memphis Hypostyle Hall Project's latest activities in the 3D imaging of the temple of Karnak, Professor Piacentini showcased the material from the Egyptology archives of the University of Milan that relate to key scholars and excavations of the 19th and early 20th centuries. HDR students Gillian Smith and Sophie Harris (Ancient History, Macquarie University) presented aspects of their research, using phenomenological and philological methodologies respectively to re-examine well-known sources, while Dr Alice McClymont demonstrated the information that can be gained from studying destruction.

These symposia allowed for members of the Egyptology community at Macquarie University to hear from visiting scholars about their latest research, but most importantly gave higher degree and early career researchers the opportunity to present their work alongside these esteemed international colleagues, to exchange ideas and receive valuable feedback.



*Top: (L–R) Miroslav Bárta, V. Gae Callender, Genevieve Holt, Nicolle Leary, Georgia Barker, Alice McClymont, Karin Sowada, and Alex Woods at New Perspectives on Ritual Landscapes in Ancient Egypt. Credit: N. Mylonas.  
Bottom: Karin Sowada (right) chairs the question session following Gillian Smith's (left) paper at Applying New Methodologies and Rediscovering Old Sources. Credit: A. McClymont.*



# Markers of Authenticity

## Markers of Authenticity Seminars & Showcase

by the Markers of Authenticity team. This report first appeared on the Markers of Authenticity blog [markersofauthenticity.com](http://markersofauthenticity.com).

Having run some 12 events, including a major international conference and a showcase event in 2018, and feeling at once somewhat burnt out and that we were not making enough time for research and writing, the *Markers of Authenticity* team pulled back a little in 2019, restricting ourselves to three seminars and an event showcasing our own research, all of which were generously sponsored by CACHE. The slimmer program of events notwithstanding, we were nevertheless pleased with what we were able to put on, which focused as always on putting representatives of different disciplines in dialogue around the themes of the research stream.

In our opening seminar for the year, we asked how collaborative memory works in practice, inviting family historian Associate Professor Tanya Evans (Modern History, Politics and International Relations, Macquarie University) to talk about her research on family historians' work with memory, and educational psychologist Associate Professor Penny van Bergen (Educational Studies, Macquarie University) to discuss her work showing how reminiscing with mothers and others supports young children's memory and emotional development. We were overjoyed that bringing these two researchers into dialogue resulted in a new collaborative research project between them, and look forward to hearing about the results of that work in the future.

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*the program focused as always on putting representatives of different disciplines in dialogue around themes of the research stream*

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In May we asked Renaissance historian Dr Nic Baker (Modern History, Politics and International Relations, Macquarie University), and Dr John Selby (Accounting and Corporate Governance, Macquarie University), an expert on technology and internet fraud from the Macquarie Business School, to discuss the Authenticity of Risk. From them we learned about financial speculation in sixteenth century Italy, through the lens of diverse attitudes to gambling, and the threats posed to authentic online interactions by cyber crime.

In August, we held our final seminar in the regular series, in which we were privileged to be able to host Dr Crystal

Abidin (Curtin University), who spoke with Associate Professor Hsu-Ming Teo (English, Macquarie University), on Authentic Selves. In this fascinating seminar Dr Abidin talked us through her work on Asian online influencers, from 'calibrated amateurism' to 'porous authenticity', while Associate Professor Teo gave us a preview of forthcoming work on the ways in which the cultural authenticity of Asian families is constructed in romance novels. The 40-strong audience spoke to the pulling power of the speakers and the research on display, and Dr Abidin generously made time to talk to early career researchers and students in the team.

For our final event of the year, the team working on the ARC funded project 'Forging Antiquity' held a afternoon seminar entitled *Deviant Expertise and Malicious Thievery* to showcase their research in the project to date. Graduate students, project staff, and student interns talked an audience of c. 50 people though their findings on forgery, ethics, and provenance in papers and posters.



Along the way in 2019, the 'Forging Antiquity' project hosted five student interns in the second half of the year, who worked on a diverse set of topics related to the ARC funded projects under the team's aegis. They all did fantastic work, some of which we'll showcase further in the future. We were very pleased that Evie Handby, who undertook an internship collecting information on the fake Hebrew and Syriac bibles which have been showing up in Turkey during the last decade, will start a Masters of Research thesis on this topic in 2020.

During the year, *Markers of Authenticity* was also renewed as a Faculty of Arts Research Stream at Macquarie University, and will soon have an internet presence on the Faculty's research pages. We look forward to taking part in the program of events to mark the opening of Macquarie new Arts precinct in 2020, in what will be the fifth year of the seminar. Best wishes from us all for a happy new year, and see you in 2020!

Above: Crystal Abidin and Hsu-Ming Teo lead discussion on the *Authenticity of Self*. Credit: N. Mylonas.

## Focus on ECRs

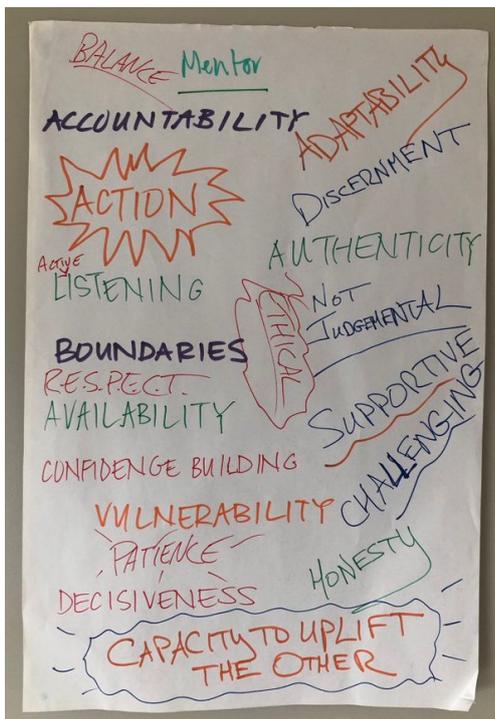
CACHE's commitment to supporting researchers at every stage of their academic careers was showcased in two events that aimed to provide encouragement and guidance to our researchers.

### CACHE Mentoring Kickstarter (5 November)

The *CACHE Mentoring Kickstarter* brought together early career, mid-career, and senior researchers from the CACHE community who were seeking to be mentors or mentees. The event was separated into two sessions. The first session was focused on the principles of mentorship, led by Leah Thode of Best Practice Consulting. The group discussed the application of mentoring partnerships, brainstormed qualities of good mentors and mentees, and shared what we each had to offer in these roles. At the end of the session, participants were asked to nominate a mentor or mentee from CACHE that they would like to work with.

The second part of the workshop was an information session for postdoctoral researchers and their mentors on current opportunities and practices to benefit their work going forward. Dr Jo Chipperfield and Professor Robert Reynolds from the MQ Arts Research Office provided Ancient History-tailored information on research grants across categories 1, 2, and 3. Dr Ryan Strickler from the University of Queensland concluded the afternoon with some wise career advice for new PhD graduates.

We look forward to seeing how these newly established mentoring relationships blossom to support good quality academia and collegiality between researchers from all different stages of their career.



### CACHE Grant Writing Drop-In Session (6 November)

CACHE organised an all-day drop-in centre for members to stop by and workshop their ideas for individual or collaborative projects. Mentors, including Professor Majella Franzmann, were on-hand to discuss research plans, offer practical advice, and share their experience of successful grant-writing.

The drop-in centre provided dedicated time for researchers at every stage to develop their proposals in a friendly and constructive environment. We look forward to holding similar events in the future.



Top: Leah Thode discusses the principles of mentorship at the CACHE Mentoring Kickstarter. Credit: N. Mylonas.

Bottom: Robert Reynolds gives advice about constructing a postdoctoral research plan at the CACHE Mentoring Kickstarter. Credit: N. Mylonas.

Left: Brainstorming qualities of being a good mentor at the CACHE Mentoring Kickstarter. Credit: N. Mylonas.

Over page, top right: Student organisers Ginger-Rose Harrington and Michael Hitches. Credit: R. Power.

Over page, middle right: Alan Williams (EMM Consulting). Credit: R. Power.

Over page, lower right: (L-R) Emile Ens (Macquarie University) and Annette Daniels (Ngukurr Community and Wuyagiba Study Hub, Northern Territory). Credit: R. Power.

Over page, bottom: (L-R) Rowan McLaughlin, Maurizio Manuguerra, Sue Barrell, Phil Duncan, Jane Thogersen, and David Christian – the Brains Trust Panel respond to the day's papers. Credit: R. Power.

## Exploring the Past with Data Workshop (18 November)

Data scientists, historians, and archaeologists came together for a one-day workshop *Exploring the Past with Data*, convened by CACHE Deputy Director Ronika Power (Ancient History, Macquarie University) and chaired by students in the Bachelor of Archaeology and Master of Research programs at Macquarie. The workshop explored new data-driven methods in archaeology and history that unravel patterns in the data and provide fresh insight into the powerful but sometimes hidden forces that shape society.

International and national speakers from industry, community, and university sectors came together to offer 8 enlightening papers and a panel and audience discussion. Researchers from a selection of national universities including Macquarie University, University of Melbourne, and La Trobe University shared their expertise. Specialists in the industry and museum sectors as well as those working with communities in the Northern Territory also enriched the audience with their knowledge, including individuals from the British Museum, Science & Technology of Australia, EMM Consulting, and Ngukurr Community and Wuyagiba Study Hub.

The extensive expertise and hands-on experience of the speakers resulted in rich and wide-ranging discussions that addressed new paradigms for data research and interpretation, how to utilise data effectively when analysing archaeological sites in the digital age, improving data quality, and unique methodological conundrums posed by different kinds of data. The relevance of these discussions extended beyond the field of archaeology, extending into other fields including environmental management and geography.

*Exploring the Past with Data* was an inspiring example of what is possible when individuals from a variety of disciplines, walks of life, and vocations come together to share their valuable knowledge and collaboratively forge new ideas. A second workshop is planned for the end of 2020.



# Research projects

*Find out what some CACHE members have been researching in 2019*

## Khirbet el-Rai, Israel

Khirbet el-Rai is an archaeological site located 3 km west of Tel Lachish, Israel at the western edge of the Judean Shephelah, on a hill above the southern bank of the Nahal Lachish. **Dr Kyle Keimer** (Ancient History, Macquarie University) has been co-director of the site for three years with Professor Yosef Garfinkel (Hebrew University) and Sa'ar Ganor (Israel Antiquities Authority). Excavations on the site have focused on two periods of occupation, 12th–11th centuries BCE, and the early 10th century BCE (the time of King David). As Macquarie's involvement with the site will come to an end in February 2020, CACHE would like to celebrate the success of three rich seasons of excavations.

The 2019 excavation season of Khirbet el-Rai proved particularly exciting as archaeologists working on the site found unprecedented evidence of settlement continuity, uncovering both a Philistine settlement and a settlement from the time of David. The excavation featured internationally in the media after archaeologists claimed that the site should be identified as the biblical site of Ziklag, with stories appearing in Haaretz, the Times of Israel, and Jerusalem Post, among other news sites.

Over 100 students in the Ancient Israel Program, organised and run by **Dr Gil Davis** (Ancient History, Macquarie University), have joined Dr Keimer on digs in Israel since the program's inception. The digs, which ran in the summer holidays for three weeks and contributed to academic merit, provided students with the opportunity to learn some fundamentals of archaeology through hands on experience, including how to take samples from the field and how to excavate items properly. The most recent dig, which took place in February 2020, was generously financed entirely by donors to the Ancient Israel Program, especially the Roth and Whitten families, and Mr Isaac Wakil for the on-site chemistry lab.



## The cemetery of Dendara, Egypt

*by A/Prof. Yann Tristant*

The site of Dendara (Upper Egypt) is well known for its temple from the Ptolemaic period (1st century BCE) dedicated to the goddess Hathor but much less for the large cemetery located south of the temple with several thousand tombs chronologically situated between the Early Dynastic period (c. 3100 BCE) and the Roman times (1st century BCE–4th century CE).

This is where a team from the Department of Ancient History, led by **A/Prof. Yann Tristant**, has been working since 2015 in collaboration with the Institut français d'archéologie orientale (IFAO), and more particularly Dr Pierre Zignani (CNRS/IFAO). The aim of the project is to study the earliest tombs and funeral practices of Dendara, while reconstructing the ancient landscape and its evolution from antiquity until today (project conducted **Dr Tim Ralph**, Department of Earth and Environmental Sciences, Macquarie University).

To date, the mission has focused on two areas of the cemetery: around the so-called 'Abu Suten' mastaba, dated from the beginning of the 4th Dynasty and considered to be the oldest pharaonic monument of the site, and an area further north where C. Fisher, an American archaeologist working under the auspices of the University Museum, University of Pennsylvania, discovered in the years 1913–1914 a group of tombs dated from the Early Dynastic Period. The first missions were the opportunity to test the archaeological potential of the site with the excavation of intact tombs, following the principles of thanatoarchaeology ('anthropologie de terrain'), and on the other hand to verify the accuracy of the data from older excavations.

*Below, left: Activities on site at Khirbet el Rai in 2020. Credit: S. Gidley.*

*Below, right: General view of the excavation of the cemetery of Dendera in 2019. Credit: Y. Tristant.*



## Nilotic history on the rocks: The Macquarie University mission to El Hosh

by Dr Fred Hardtke

Dr Fred Hardtke (Ancient History, Macquarie University) directs the fieldwork component of a new Macquarie University mission to the site of El Hosh in Egypt in collaboration with the Belgian Royal Museum of Art and History, Brussels. El Hosh is one of the most extensive Nilotic rock art sites in Upper Egypt, featuring some of the oldest rock art in North Africa. The petroglyphs found at the site include an array of boats, hunted wild animals, and enigmatic abstract signs scattered over a wide area. Interpretation of this rich artistic medium, in collaboration with program members A/Prof. Yann Tristant (Ancient History, Macquarie University), Dr Linda Evans (Ancient History, Macquarie University) and Dr Louise Pryke (University of Sydney), will provide new insights into the early history and cultural development of Nilotic communities from the Egyptian Palaeolithic, Epipalaeolithic and Predynastic periods (c. 13,000–3,000 BCE). The project fieldwork component commenced in November 2019 with survey recording at El Hosh and will move to neighbouring areas over successive seasons.

The team included the following members (in alphabetical order): Wouter Claes (archaeologist and assistant director), Fred Hardtke (archaeologist and director), and David Johnson (technical photographer). The Ministry of State

Antiquities of Egypt was represented by Mr. Mostafa Mohamed Ahmed Badawi of the Antiquities Inspectorate at Silsila (Upper Egypt). We were comfortably accommodated in the heritage Somers-Clark-built Belgian dig-house. It provided welcome relief from the day's travails scrambling the rocky hills of El Hosh.

The season concentrated on four main areas: Abu Tanqura Qibli Qibli (ATQQ), Abu Tanqura Qibli (ATQ), Curly Arm Rock (CAR) and Gebel Yusef (GYU). In total, 89 localities were registered and recorded. Of these, ATQQ was particularly important as it was a relatively small area with a high density of petroglyphs, which we were able to completely cover with Level 1 survey (recorded at the locality level) this season. Of special significance also was ATQ which we targeted for a known single, enigmatic petroglyph which was suspected to be representative of a chameleon – a motif previously unknown to the region. We wanted to record the little beast in as much detail as possible to enable the animal science

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*The petroglyphs found at the site include an array of boats, hunted wild animals, and enigmatic abstract signs scattered over a wide area*

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Above: (L–R) Abdelsalam (guard), Wouter Claes, David Johnson, Fred Hardtke – the El Hosh fieldwork team. Photo by F. Hardtke.

Opposite, top: Various petroglyphs at Curly Arm rock. Credit: F. Hardtke.

Opposite, bottom left: Fred Hardtke testing a 120mm film camera for recording. Credit: F. Hardtke.

Opposite, bottom right: Twin Predynastic boats. Credit: F. Hardtke.



skills of Dr Linda Evans to be used in its identification – note that a journal article has now been submitted on the subject. ATQQ is an area bounded by the Nile cultivation on the east and the modern tarmac road on the west, forming an ellipse shaped area and measuring 960 metres north to south. A series of vertical walls (with occasional breaks) were found to run from north to south on which many rock art panels featured. Amongst the localities, we re-discovered rock art previously noted by the Frobenius 8th DIAFE Expedition (1926), Jean Capart (1930) and H.A Winkler (1936-1937). The locations of these were no longer known and the rediscovery of these and confirmation that they had not been removed or destroyed since that time is important. A particularly poignant find was a scene with twin high-prowed boats typical of the late Predynastic – a scene we knew was once observed by Jean Capart in 1930 from an old photo – and we really wanted to find. A total of 60 localities were registered in this area. Motifs found here included overall: boats, gazelles, rhino, ostriches, elephants, humans, riding warriors, birds/falcons, bovids, giraffes, feet, Hieroglyphic inscriptions, Greek texts, Arabic texts, geometric designs, donkeys, felines, camels, gerenuks, dogs, addax, oryx, scoop marks, notch rows, archers and tribal signs.

A further aim of the season was to test 3-dimensional recording methods of rock art panels and the ability to include these 3-dimensional models into virtual panoramic tours. Since GYU has a number of boulders with rock art on their faces, it was decided that the boulders and some of the faces here were suitable for recording using photogrammetry to produce 3-dimensional models of the boulders as well as for capture by 360-degree panoramas to provide context. Thus, some of the rock art panels on the hill and on the boulder faces were captured and incorporated into virtual tours which allow the observer to have a sense of the rock art context in the landscape. It is planned to exhibit some of these at the CACHE-sponsored *Living Digital Heritage* conference at Macquarie University October 10th-12th, 2020. We also tested an android-tablet based locality registration database, developed by Dr Hardtke specifically for rock art survey and El Hosh. This was particularly useful as the data could be entered whilst viewing the rock art. El Hosh has mobile coverage and the application is able to update via the cloud in real time. Thus, it was with some interest and indeed amusement as we watched each other's rock art location entries pop up in our respective databases on our tablets as they were constantly synchronising in the field.



## The origins of silver and the bracelets of Queen Hetepheres

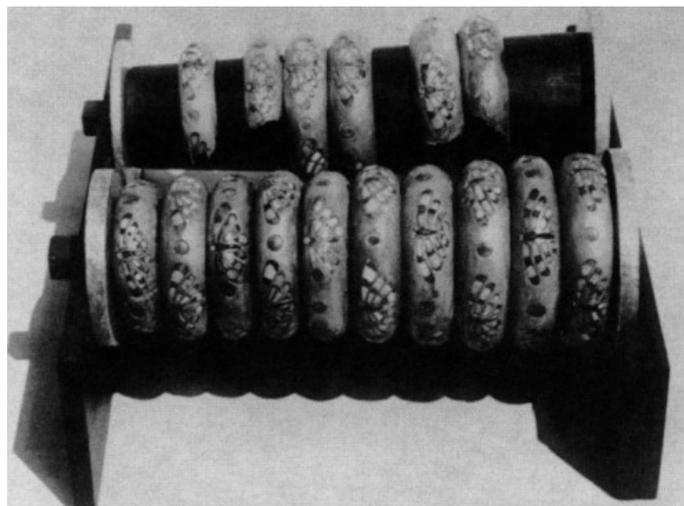
by Dr Karin Sowada

Some of the most famous silver objects from Egypt are the bracelets of Queen Hetepheres, wife of king Sneferu and mother of king Khufu, builder of the Great Pyramid (date of reign c. 2589–2566 BC). The jewellery was found in her Giza tomb by American archaeologist George Reisner in 1925. While this was not her original burial, the tomb contained many funerary objects intact and undisturbed for nearly 4,600 years.

Owing to the high incidence of ancient and modern tomb-robbing, intact royal burials for this period are rare. Even today, the tomb remains one of the richest and most extensively preserved deposits of funerary objects from the Old Kingdom. The objects are now located in the Egyptian Museum (Cairo), including most of the surviving bracelets. Decades ago, two were gifted by the Egyptian Government to the Museum of Fine Arts in Boston (MFA), who co-sponsored the expedition with Harvard University. The MFA collection includes bracelets on display and fragments in the storeroom.

Egypt was rich in gold but lacked native silver ore deposits. From an early time, silver was imported but its source is not known. Research has been undertaken on later material, but for the third millennium, its origins as a traded commodity remain a mystery. Limited analysis was conducted on the bracelets in the 1920s but since then little research has been carried out. A new research collaboration is working on a program of scientific analysis on bracelet fragments in the MFA to expose the origins and trade networks of early silver ore and metalworking techniques in the third millennium BC.

CACHE member and ARC Future Fellow **Dr Karin Sowada** (Ancient History, Macquarie University) is working with Dr Richard Newman (MFA, Head of Scientific Research)



and Dr Michele Derrick (MFA, Scientific Research), **Dr Gil Davis** (Ancient History, Macquarie University), **Professor Damian Gore** (Earth & Environmental Sciences, Macquarie University), and Professor Francis Albarède (Ecole normale supérieure, Lyon). Prof Albarède leads the ESF Project ‘Silver Isotopes and the Rise of Money’, of which Dr Davis is also part, to identify and analyse silver sources in the ancient world.

A bracelet piece was analysed by X-ray fluorescence (XRF) and scanning electron microscopy/energy dispersive X-ray spectrometry (SEM/EDS) at the MFA to separate the trace elements in the silver and understand the manufacturing process. Further study of the results will be undertaken in the laboratories of the Department of Earth and Environmental Sciences at Macquarie University. A non-invasive sample will be obtained from Boston later this year for silver isotope analysis in Lyon; the data will be matched to source material from known mines in the Mediterranean. Early results reveal information about the silver composition and provide a unique window into metalworking techniques in Egypt over 4,600 years ago. It is hoped that future results will help to identify the origins of the silver ore and thus expose the trade networks of Egypt’s great kings.



Top: The bracelets of Hetepheres on their restored supports. The surface was decorated with inlay of lapis lazuli, turquoise and carnelian in the shape of butterflies. Credit: George Andrew Reisner (1867–1942) / Public Domain, [Wikimedia Commons](#).

Bottom, left: Bracelet fragment MFA 47.1702 B2P1, Museum of Fine Arts, Boston. Credit: K. Sowada.

Bottom, right: Other bracelet pieces are too corroded for analysis, but show depressions for inlay of semi-precious stones. Credit: K. Sowada.

## Yugul Mangi Faiya En Sisen Kelenda (Yugul Mangi Fire and Seasons Calendar)

Michelle McKemey, a PhD student co-supervised by Dr Emilie Ens (Earth and Environmental Sciences) and the University of New England, has worked with the Yugul Mangi Rangers in Arnhem Land, Northern Territory, to produce a seasonal calendar of savanna burning practices.

The Yugul Mangi Rangers of the South-East Arnhem Land Indigenous Protected Area (SEALIPA) have used both ancient Indigenous knowledge and western science to develop a cross-cultural approach to savanna burning on country. Fire has traditionally been used as a land management technique to facilitate plant growth and hunting, to clear land, to communicate between groups, and for ceremony. Today, the work of the Yugul Mangi Rangers is part of a greenhouse gas abatement program to assist in reducing emissions caused by late dry season fires. The rangers combine traditional and western biocultural knowledge and methods to carry out burning, using modern fire-starting and surveying technologies while adhering to ancestral routes and cultural customs regarding which members of the community can light fires in certain areas. Their approach has resulted in



improved fire management practices, reducing the impact of destructive wildfires.

In 2016 and 2019, Michelle led interviews with rangers and Elders to record their knowledge and practice of seasonal burning. Through this collaboration between Indigenous community members and non-Indigenous scientists, the *Yugul Mangi Faiya En Sisen Kelenda* was produced. The calendar includes biocultural terminology from the seven language groups of the SEAL IPA, and presents their best-practice understanding of when to carry out burning for the management of this land.

The calendar will not only assist in ongoing fire management planning for the Yugul Mangi Rangers, but can also serve as an imperative educational tool for the transfer of ancient Indigenous knowledge to younger generations and the promotion of caring for country. The cross-cultural approach to burning practices that is recorded in the calendar also has national and global applications to other fire-prone regions, which are experiencing increasingly harmful wildfire activity.

Michelle and Yugul Mangi Rangers Jana Daniels and Winston Thompson were awarded a Right-Way Science prize by the Ecological Society of Australia in 2019. A full report of the project was published in M. McKemey, E. Ens, Yugul Mangi Rangers, O. Costello & N. Reid, Indigenous Knowledge and Seasonal Calendar Inform Adaptive Savanna Burning in Northern Australia, *Sustainability* 12(3) (2020), DOI [10.3390/su12030995](https://doi.org/10.3390/su12030995). The *Yugul Mangi Faiya En Sisen Kelenda* can be viewed through [Research UNE](https://www.research.unsw.edu.au/).

Above: Yugul Mangi Ranger Jana Daniels carrying out seasonal savanna burning. Credit: M. McKemey.

Left: M. McKemey, Yugul Mangi Rangers, Ngukurr Community & E. Ens, Yugul Mangi Faiya En Sisen Kelenda (Yugul Mangi Fire and Seasons Calendar), University of New England, Armidale NSW (2019), DOI: [10.25952/5dd1b81581d98](https://doi.org/10.25952/5dd1b81581d98). Released under Creative Commons. CC BY-NC-SA 4.0.

# Interview with the Director

## Professor Bronwen Neil

*Director of CACHE, Professor Bronwen Neil, reflects on the Centre's inaugural year and exciting future*

*Interviewed by Natalie Mylonas*

### What motivated you to become director of CACHE?

I saw a need for a new interdisciplinary centre that would bring together research from environmental studies and various disciplines in the Faculty of Arts, including the relatively new discipline of Archaeological Science. These disciplines are just learning to talk to each other, and it's a great time to be doing research that treats anything to do with the environment. Our collaborative projects on cultural heritage and leadership crises in the ancient world are also timely at this point in the 21st century.

### What makes CACHE stand out from other research centres that you have been involved with?

This is the first time I have sought to forge a working relationship between humanities and the sciences for the enrichment of research in both camps. Our emphasis at CACHE is on fostering early career researchers in a collaborative environment which bridges the traditional divide between scientific and humanities research. It's also the first time I've been involved in a research centre which includes Australian and other Indigenous societies in its definition of ancient cultural heritage. That's exciting! The large number of members - thirty-five! - also makes this research centre different from those I've been involved with until now.

### What were some highlights from CACHE's inaugural year?

The workshop *Exploring the Past with Data* convened by Associate Professor Ronika Power (Ancient History) in November was a definite highlight. We were lucky to have several Indigenous Australians participate in this one-day workshop, bringing their knowledge of environmental management to the table with archaeologists working on ancient sites in Ireland, England, Egypt, and elsewhere. We had a great kick-start to our mentoring program for early and mid-career researchers with a session on how to get the most out of being a mentor/mentee. The grant-writing drop-in session produced some good ideas for new collaborative projects. The CACHE seminar for the Department of Ancient History, where we had an archaeological scientist, an ancient Greek literature scholar, and a specialist in Egyptian rock art, speak together about how they are working toward the goals of CACHE with their various projects was also inspiring.

### What is next for CACHE?

We have plenty of things happening in 2020. **Emilie Ens** (Earth and Environmental Sciences) is working with local people from Arnhem Land on an environmental project to do with conserving paperbark habitat. We are planning a major conference on *Living Digital Heritage* and a symposium on *Humans in Deserts*, both being convened by early career researcher **Dr Fred Hardtke** (Ancient History). **Associate Professor Power** plans to run a second *Exploring the Past with Data* workshop in the second half of the year too. Alex Woods has just formalised an agreement with the Griffith Institute Archive at Oxford University to publish some of their materials relating to the Beni Hassan site in Egypt. We will also be welcoming four scholars under our inaugural Postdoctoral Visiting Fellowship, an award of \$5000 for an early career researcher in archaeological science or ancient history. Associate Professor George Steiris will be visiting from the University of Athens to work with Eva Anagnostou-Laoutides and Ken Parry on Byzantine philosophy. And there are plenty of other ongoing projects, especially in the growth area of using Archaeological Science to understand the cultural heritage ancient Egypt. Please go to [our website](#) for further details!



Above: Professor Bronwen Neil introducing CACHE's 2019 plans at the Department of Ancient History research seminar in March 2019. Credit: R. Power.

# CACHE Executive Committee & Advisory Board

## 2019

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#### Deputy Directors

Professor Malcolm Choat (Arts, Macquarie University)

Associate Professor Ronika Power (Ancient History, Macquarie University)

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Mr Phil Duncan (Indigenous Strategy, Macquarie University)

Dr Emilie Ens (Earth and Environmental Sciences, Macquarie University)

Professor Damian Gore (Earth and Environmental Sciences, Macquarie University)

Dr Fred Hardtke (Ancient History, Macquarie University)

Professor Marie Herberstein (Biological Sciences, Macquarie University)

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Dr Tim Ralph (Earth and Environmental Sciences, Macquarie University)

Dr Karin Sowada (Ancient History, Macquarie University)

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Ms Natalie Mylonas (Ancient History, Macquarie University)

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