


Institution: University of Glasgow (UofG)		
Unit of Assessment: 32 Art and Design: History, Practice and Theory		
Title of case study: Enhancing learning and practice of museum professionals and source community members through material research into Pacific barkcloth		
Period when the underpinning research was undertaken: 2016–2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Frances Lennard	Professor of Textile Conservation	2010–present
Andrew Mills	Research Associate	2016–present
Margaret Smith	Lecturer	2011–present
Misa Tamura	Research Conservator	2016–2018
Jennifer Brunton	Analytical Assistant	2018–2018
Aisling Macken	Conservation Assistant	2018–2018
Marika Kesler	Conservation Assistant	2019–2019
Maria Economou	Professor of Digital Cultural Heritage	2013–present
Katrina Igglesden	Research Associate	2020–2020
Period when the claimed impact occurred: 2017–31 st December 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>UofG multidisciplinary research into Pacific barkcloth has encouraged new displays of the material in museums, improved the quality of interpretation and enhanced conservation. An outreach programme has increased physical and digital access to collections in the UK, the Pacific, and North America, for barkcloth practitioners, curators, researchers and the public. Outreach work found particular resonance with members of the source (Pacific) communities who still make barkcloth, or are working to reintroduce this lost skill, in some cases sparking a renewed interest. Non-specialist curators of museums with some barkcloth artefacts have also learned how to better interpret this culturally significant material.</p>		
		
<p><i>Figure 1: Example of barkcloth: part of a 19th century room divider from Fiji</i></p>		

2. Underpinning research

Barkcloth, a fabric made from the inner bark of trees and used in the islands of the Pacific for around 5,000 years, was fundamental to the culture it came from. It was used for all clothing, furnishing and ceremonial purposes until western textiles and clothing replaced barkcloth for common use from the 19th century. The material is still used across the region as an expression of cultural identity although there are few large collections of historic cloths in museums in the Pacific (only in Hawai'i and New Zealand). To date, research into Pacific material culture has largely been conducted through art-historical and anthropological lenses. By contrast, this international and interdisciplinary project, funded by the AHRC (2016–2020), investigated barkcloth (known as 'tapa' in the Pacific region) from a material perspective.

The project, led by Frances Lennard, tackled major gaps in our understanding of the production and use of this material, taking a new, materials-focused approach to the study of the Pacific (principally Polynesia) through its barkcloth heritage. Researchers from art history, materials science and conservation investigated the development of barkcloth production in the Pacific in the 18th and 19th centuries through a close examination of two significant collections, at The Hunterian, University of Glasgow, and the Royal Botanic Gardens, Kew, combined with Pacific-based research into plant sources and manufacturing methods.

This work has shed new light on the materials used to make barkcloth, revealed regional and chronological differences in manufacturing methods and demonstrated the impact of materials and processes on the nature and uses of the finished fabric. This has resulted in a much better understanding of the skilled way in which barkcloth manufacture was controlled to create a range of cloth types for different purposes. The research showed that manufacturing methods, such as soaking and fermentation, play an even more significant role than fibre type in determining the properties of the finished cloth, identifying differences in techniques used in western Polynesia (Tonga, Samoa), Fiji and eastern Polynesia (Tahiti). This allowed the researchers to identify key textural features, making accurate cultural attributions more straightforward for museum professionals and art historians around the world.

It has always been extremely problematic to identify the plant species used to make barkcloth because beating the bark to make cloth caused major fibre damage. Lennard and her team pioneered the use of Fourier transform infra-red spectroscopy (FTIR), together with statistical analysis, and trialled other techniques such as genome sequencing. 22 contemporary and 79 historic cloths were analysed to develop this methodology, enriching our understanding of the properties of the finished cloth. Dye and pigment analysis revealed a more limited range of dyes than expected, principally noni, tannin and turmeric, plus resins and ochres, calling into question the much more abundant list of materials found in the historic record. Research into conservation treatments also identified solutions to particular conservation problems, such as improved methods of employing adhesive supports and dyeing support materials, as well as providing conservators with a better understanding of the intangible properties of this material.

3. References to the research

- 3.1 Lennard, F., Tamura, M. and Nesbitt, M. 2017. Re-evaluating student treatments of barkcloth artefacts from the Economic Botany Collection, Royal Botanic Gardens, Kew. In *Preprints ICOM Committee for Conservation 18th Triennial Meeting, Copenhagen, 2017*, edited by Janet Bridgland. Paris: International Council of Museums. [Available at <http://eprints.gla.ac.uk/140888/>]

- 3.2 Mills, A. (2018). Engaging aesthetically with tapa barkcloth in the museum. *The Senses and Society* 13(3): 367–374. Available from: [doi:10.1080/17458927.2018.1516025](https://doi.org/10.1080/17458927.2018.1516025).
- 3.3 Smith, Margaret J., Holmes-Smith, S. and Lennard, F. 2019. [Development of non-destructive methodology using ATR-FTIR with PCA to determine the species' groups used in the making of historical Pacific barkcloth](https://doi.org/10.1016/j.culher.2019.03.006). *Journal of Cultural Heritage* 39: 32–41. [<https://doi.org/10.1016/j.culher.2019.03.006>]
- 3.4 Flowers, T. H., Smith, M. J. and Brunton, J. 2019. [Colouring of Pacific barkcloths – Identification of the brown, red and yellow colourants used in the decoration of historic Pacific barkcloths](https://doi.org/10.1186/s40494-018-0243-9). *Journal of Heritage Science* 7:2. [[doi:10.1186/s40494-018-0243-9](https://doi.org/10.1186/s40494-018-0243-9)]
- 3.5 Lennard, F. and Mills, A., eds. 2020. [Material Approaches to Polynesian Barkcloth: Cloth, Collections, Communities](https://www.sidestone.com/en/publications/material-approaches-to-polynesian-barkcloth). Leiden: Sidestone. [Available from HEI]
- 3.6 *Situating Pacific Barkcloth in Time and Place*, <https://tapa.gla.ac.uk/> Project website containing searchable database of Hunterian and Kew collection.
- 3.7 Tamura, M., Ridley, C. and Lennard, F., eds. *Recent Advances in Barkcloth Conservation and Technical Analysis: Postprints of the Symposium held at Royal Botanic Gardens, Kew, December 7, 2018*. London: Icon Ethnography Group. [Forthcoming].

Quality: This research, the outcomes of a major AHRC-funded project, is published mainly in peer-reviewed journals, and is expected to meet or exceed the 2* threshold.

4. Details of the impact

The UK, Germany, France, the USA, New Zealand and Australia each have a few museums with significant collections of barkcloth. The total number of specialist curators worldwide is fewer than museums with major collections, although virtually every museum in the UK has some barkcloth, and Lennard and her team set out to engage these non-specialist curators with their findings. Although the world's largest is Hawaii's Bishop Museum, most Pacific nations lack significant barkcloth collections: historic barkcloth rarely survives in the tropical conditions of Oceania, and cultural knowledge has been lost there. The team therefore sought to share findings from western museums with source communities where access to collections, physical and digital, is highly valued.

Engaging Pacific source communities, curators and conservators

There is active interest in source communities in preserving, reviving, and understanding skills in barkcloth-making. At a project workshop at Auckland Museum, New Zealand, in October 2017, researchers brought together practitioners, including from Tonga and Samoa, with others working to reintroduce the skill to the Cook Islands. Another project workshop was held for barkcloth-makers at the Bishop Museum in Honolulu, Hawai'i in December 2017. The then-curator commented that it had a great impact on Hawaiian communities of barkcloth-makers, and '*inspired renewed models for the care and display of associated collections at the Bernice Pauahi Bishop Museum*', the premier museum for Pacific natural and cultural history in Oceania.

The workshop became a model for a further series of workshops at the museum, the Laulima Workshop Series. Bishop Museum's curator added that the project's events, '*rooted in community engagement and participation[,] celebrated and perpetuated indigenous creativity while fostering global conversations, and further contributed to nurturing relationships across disciplines and rebuilding trust with source communities*' [5.1].

The project team also successfully engaged Pacific communities via social media. By mid-November 2020 their Instagram account had 521 followers, many from the Pacific and some

actively discussing materials and techniques with the researchers [5.2]. Social media is also used to highlight artefacts from the research collections.

When the final (2020) museum workshops were delayed by Covid-19, the team held them online in September, early mornings and evenings to allow people from the Pacific to participate. These were fully booked within days and extended from four to five sessions to accommodate demand. The 70 participants included Pacific community members, conservators and curators from smaller UK museums. An evaluation survey [5.3] showed participants valued and learned from the experience, with 83% of 23 reporting they knew more about the use and cultural significance of tapa in the Pacific. One noted that it *'allowed me to think more clearly about how collections across the Pacific interact'* and another stated: *'[I] feel inspired to collect contemporary work'*.

The [project website](#), launched concurrently, provides an ongoing source of specialist information for both Pacific community members and curators. 95.5% of survey respondents [5.3] said that the website would assist their understanding and interpretation of Pacific tapa. One commented that *'having the new website is a great first step to increased engagement of Pacific diaspora with tapa collections held overseas'*. Another found the website resources *'very informative and provided in-depth understanding ... which I (even though Samoan) had never considered before'*. A UK curator described the resources as *'authentic and simple'* and *'accessible for non-specialists'*, adding that they will use them to amend their museum's records and approach display improvement and research enquiries more confidently.

Influencing and inspiring new displays of barkcloth and public engagement

In the above post-workshop survey, 100% of the respondents who work in a museum said that after the workshop they felt more comfortable engaging with tapa [5.3]. Ipswich Museum tweeted: *'cannot wait to get more of the barkcloth in @ipswich Museum collections out and loved'* [5.4]. One participant from Fiji Museum commented: *'the workshop will give the Fiji Museum the opportunity to document the traditional and contemporary masi materials and techniques [and form the basis of] a one-week masi workshop in future'* [5.3].

The research findings had already been encouraging both specialist and non-specialist curators to make exhibitions of barkcloth artefacts, which will in turn enhance interpretive narratives. For example, the Curator of the George Washington University Museum's Textile Museum (which has no in-house barkcloth expertise), commented: *'the project encouraged us to look with new interest at our own barkcloth collection and to pursue our first exhibition on this subject. Through the application of findings from the University of Glasgow project's research, we are deepening our understanding of the GWM/TM's barkcloth collection and its conservation'* [5.5].

Through collaboration with the researchers, the project also spurred specialist Anthropology curatorial staff at National Museums Scotland (NMS) to develop research into their own barkcloth collection. NMS's Senior Curator of African Collections stated: *'this project has undoubtedly raised the research profile of ... barkcloth in museum collections. Whilst the project focused on the Pacific material it has also inspired curators at NMS to consider new lines of enquiry [into] the different types of barkcloth from Pacific, African and Indonesian collections held in the department of World Cultures...'* [5.6]. Accordingly, NMS is launching a new webpage on barkcloth which links to project resources, although this has been delayed by Covid.

New or improved displays in turn deepen the public's understanding of barkcloth as a material, and of its significance to both Pacific islanders and western collectors. In 2019 c.37,000 visitors

saw an exhibition based on the research, *Barkcloth: Revealing Pacific Craft*, at the Hunterian Museum, Glasgow. 70% of 67 surveyed visitors had never before heard of barkcloth; 61% of these said the exhibition inspired them to find out more about Pacific art [5.7].

Changes to the understanding and practice of conservators

Conservators, in addition to curators, now have a better understanding of how barkcloth is made and more knowledge of conservation techniques. Improved understanding informs conservators' selection of treatment approaches, improving preservation of barkcloth artefacts and their accessibility for research and display. After a workshop in March 2018 for 10 museum conservators from the UK and the Netherlands facilitated in-depth study of barkcloth conservation techniques, 7 of the 10 strongly agreed it had increased their skillset/knowledge of Polynesian barkcloth and its conservation [5.8]. One UK museum conservator with no prior knowledge of barkcloth said '*through the knowledge gained on the course I was able to put forward a justification for including [barkcloth in an exhibition]. The piece we put on display required some humidification and spot repairs, [and] as a result of the course I was a lot more confident in carrying out these treatments*' [5.9].

An international symposium disseminated project results to c.100 conservators in 2018, representing the majority of UK museums with barkcloth, plus major collections in mainland Europe. 79% (of 29 surveyed) said they had a better understanding of the material as a result, and 76% intended to change their practice [5.10]. The findings and methodologies now have potential to be applied to other, and non-Pacific, barkcloth collections around the world.

5. Sources to corroborate the impact

- 5.1 Testimonial email from Benioff Curator of Oceania, The British Museum; formerly Collections Manager for Ethnology, Bishop Museum, Honolulu, March 2020. [PDF], corroborating the impact on Pacific communities of kapa and tapa makers.
- 5.2 Report by UofG's Katrina Igglesdon summarising Instagram statistics [PDF], corroborating engagement. Instagram proved most effective in engaging source communities.
- 5.3 Pre- and post-session evaluation surveys relating to the workshops held for both source community makers and museum and university staff, 7–9th September 2020. [PDF]
- 5.4 Collated file of Twitter screenshots [PDF], corroborating response to the online workshops & project engagement. Twitter proved most effective in engaging textile professionals.
- 5.5 Testimonial letter from Curator, George Washington University Museum/The Textile Museum, Washington, D.C., December 2019. [PDF]
- 5.6 Testimonial email from Senior Curator African Collections, Department of World Cultures, National Museums of Scotland, June 2020. [PDF], corroborating the impact of the project on NMS in relation to their own backcloth holdings.
- 5.7 Evaluation responses from visitors to the exhibition: *Barkcloth; Revealing Pacific Craft*, The Hunterian, 29 August–8 December 2019. [PDF], corroborating impact on visitors.
- 5.8 Feedback forms from the workshop, *Barkcloth Conservation and Siapo Making*, University of Glasgow, 26–28 March 2017 [PDF], corroborating learning of participants.
- 5.9 Testimonial email from Conservator, McManus Museum, Dundee, 12 December 2019. [PDF], corroborating impact of the 2018 workshops on their practice.
- 5.10 Feedback forms from the symposium, *Recent Advances in Barkcloth Conservation and Technical Analysis*, Royal Botanic Gardens, Kew, 7 December 2018. [PDF]