Australian Government
Australian Research Council

EI 2018 ENGAGEMENT AND IMPACT

Engagement and Impact 2018

Western Sydney University

WSU21 (CAH) - Impact

Overview

Title

(Title of the impact study)

Empowering museums and science centres as change agents in global climate change Interventions

Unit of Assessment

21 - History and Archaeology

Additional FoR codes

(Identify up to two additional two-digit FoRs that relate to the overall content of the impact study.)

Socio-Economic Objective (SEO) Codes

(Choose from the list of two-digit SEO codes that are relevant to the impact study.)

95 - Cultural Understanding

Australian and New Zealand Standard Industrial Classification (ANZSIC) Codes

(Choose from the list of two-digit ANZSIC codes that are relevant to the impact study.)

69 - Professional, Scientific and Technical Services (Except Computer System Design and Related Services)

Keywords

(List up to 10 keywords related to the impact described in Part A.)

Museums

Climate change

Communication

Agencies

Activism

Advocacy

Media

Engaged research

Climate policy

Communities.

Sensitivities

Commercially sensitive

No

Culturally sensitive

No

Sensitivities description

(Please describe any sensitivities in relation to the impact study that need to be considered, including any particular instructions for ARC staff or assessors, or for the impact study to be made publicly available after EI 2018.)

Aboriginal and Torres Strait Islander research flag

(Is this impact study associated with Aboriginal and Torres Strait Islander content?
NOTE - institutions may identify impact studies where the impact, associated research and/or approach to impact relates to Aboriginal and Torres Strait Islander peoples, nations, communities, language, place, culture and knowledges and/or is undertaken with Aboriginal and Torres Strait Islander peoples, nations, and/or communities.)

No

Science and Research Priorities

(Does this impact study fall within one or more of the Science and Research Priorities?)

Yes

Science and Research Priority	Practical Research Challenge
Environmental change	Options for responding and adapting to the impacts of environmental change on biological systems, urban and rural communities and industry.

Impact

Summary of the impact

(Briefly describe the specific impact in simple, clear English. This will enable the general community to understand the impact of the research.)

Museums and science centres are amongst the most trusted institutions in the world and regarded as safe places for the intersection of scientific developments and social interactions, including climate change, a serious global threat facing the world. Western Sydney University (WSU) research positioned and empowered museums and science centres as key agents of and catalysts for climate change action globally. Guidelines developed from the research informed museums and science centres globally about their key role in influencing government and communities to: tackle climate change; engage with audiences globally; develop exhibition and program content tailored to different audiences; strengthen connections between science and cultural aspects of climate change and inform climate policy.

Beneficiaries

(List up to 10 beneficiaries related to the impact study)

Communities directly involved in the research, including 2100 people in Australia and the US who participated in the online survey

Museum visitors from the five participating institutions included in focus groups and in online surveys,1500

Museum Victoria; Questacon, National Science Centre, Canberra; National Library of Australia;

Museum of Applied Arts and Sciences (Powerhouse Museum), Sydney; Australian Museum, Sydney;

Liberty Science Center, Jersey City, New Jersey, US; The Climate Museum, New York; Humboldt Museum, Berlin;

Te Papa Tongarewa (Museum of New Zealand, Wellington) Manchester Museum, UK; Varanger Museum, Norway; Monterey Aquarium;

Interpretive Center, Coastal Shores, US; (all beneficiaries at the symposium); Museum of Tomorrow, Rio, Brazil

American Association of Museums; Museums Australia; Canadian Museums Association; International Council of Museums (ICOM) peak body;

Association of Science and Technology Center

Museum curators; exhibition designers; museum educators; project managers; museum management; museum directors

Countries in which the impact occurred

(Search the list of countries and add as many as relate to the location of the impact)

Australia
United States of America
England
Scotland
Wales
Norway
Germany
New Zealand
Brazil

Details of the impact

(Provide a narrative that clearly outlines the research impact. The narrative should explain the relationship between the associated research and the impact. It should also identify the contribution the research has made beyond academia, including:
- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)
- the nature or type of impact and how the research made a social, economic, cultural, and/or environmental impact
- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of those affected, reported benefits etc.)
- the dates and time period in which the impact occurred.

NOTE - the narrative must describe only impact that has occurred within the reference period, and must not make aspirational claims.)

WSU's Institute for Culture and Society (ICS) led an innovative research program 'Hot Science, Global Citizens' that developed new knowledge about effective climate change action and how that can be represented and debated across sectors and communities, and built capacity for museums and science centres to become key agents of climate change debate and interventions, benefitting museum practice, cross-sectorial and community engagement with climate change issues and associated government policy.

POSITIONED MUSEUMS AND SCIENCE CENTRES AS KEY AGENTS IN CLIMATE CHANGE INTERVENTIONS GLOBALLY
This research developed guidelines informing museums and science centres to play a major role in tackling climate change, which included recommendations about their roles in local and global networks and how to influence communities, industry and government to counter climate change; form local, national and global networks to engage audiences around the world; develop exhibition and program content tailored to different audiences; engage with controversial climate science topics; and interact with media networks.The Hot Science guidelines and recommendations were used by museums and science centres to create substantive programs and exhibitions and to build networks. Since 2011 the project has effected change in multiple locations, including:
- Monterey Aquarium (USA) and the Interpretive Center Coastal Shores, developed content and devised audience engagement strategies to create new exhibits (2012) on the impact of climate change on oceans.

- Manchester Museum (UK), for its new climate change exhibition in 2016. Also collaborated with the Tyndall Centre for Climate Change Research and produced a toolkit on climate change (based on this research) for distribution to other UK museums.
- Museum Victoria, planned an exhibition on the Anthropocene (geological age characterised by human's influence on the planet) and climate change.
- Planning of the new Climate Museum in New York (2015), in framing its role as a node in societal climate change networks and in using a combination of art and science to raise awareness and mobilise action.
- Planning of climate change exhibitions in 2015- 2016 for the forthcoming Humboldt Museum in Berlin opening in 2019.

The impact of this research in positioning and empowering museums as agents of climate change intervention has been widely acknowledged: Henry McGhie (Curator, Manchester Museum) indicated: "Hot Science has great significance for the museum field in helping institutions to shift their current practice significantly in order to fulfil their potential around climate change engagement /communication/ promoting climate action;" Kate Phillips (Senior Curator Museum Victoria) stated: "The Project's research changed institutional thinking by encouraging museums to act; to think in terms of networks and collaborative projects rather than singular events and exhibitions;" and Morien Rees (Chair of International Council for Museums), Varanger Museum, Norway commented: "The Hot Science project and its research led to the development of a global climate change initiative for action."
In collaboration with climate scientists, curators, and exhibition developers, this research pioneered and tested a novel dialogic approach that aided museums and science centres to take a lead on controversial climate science discussions. Brenton Honeyman (Manager, Questacon) said: "The Project clarified organisational thinking about and awareness of factors to take into consideration when engaging people on climate change involving controversy". Through the Insights reports developed for each partnering institution, this research assisted exhibition developers and curators to develop programs that involved audiences as 'participants', created experiences that respected their skills, capacities and opinions, but also encouraged them to adopt more sustainable consumption practices. Project Manager of Exhibitions at Museum Victoria, Jill Mitchell, said: "The exhibition, 'You can't do that' used the excellent Hot Science research to involve our visitors in rethinking their own fashion practices and consider positive alternatives to mass manufacturing and preventing fashion waste."

BROADENED MUSEUMS' UNDERSTANDING AND FRAMING OF CLIMATE CHANGE
The research was instrumental in broadening how museums understood and then represented climate change to their audiences. Through an interdisciplinary approach involving scientists, cultural and media researchers and museum professionals, the project pioneered and facilitated the development of content (for exhibitions and programs) that addressed the global cultural and social dimensions of climate change alongside the scientific dimension. Professor Mike Hulme, University of Cambridge, UK and advisor to the Science Museum, London on climate change engagement stated: "The broader value of the project [Hot Science] was to strengthen connections between the science and cultural aspects of climate change and the ways in which museums might frame climate change more broadly for public audiences – climate change is way more than a science story and touches on profound human values, beliefs, hopes and fears."

INFORMED POLICY
Through the federal parliamentary briefing, A Climate for Change initiated and convened by lead researcher Cameron (held at Federal Parliament House 21 March 2011) the initiative delivered key messages around communication and governance of climate change. The Hon Mark Dreyfus, Parliamentary Secretary for Climate Change and Energy Efficiency and Chair of the Multi-Party Climate Change Committee, acknowledged the important roles that museums and science centres have to play in climate change and the value of this project's dialogic method in helping frame government approaches to controversial science. Adam Bandt, MP discussed policy preference data and ways it will be used to inform the Committee's work on framing climate policy.

Associated research

(Briefly describe the research that led to the impact presented for the UoA. The research must meet the definition of research in Section 1.9 of the EI 2018 Submission Guidelines. The description should include details of:
- what was researched
- when the research occurred
- who conducted the research and what is the association with the institution)

The Hot Science, Global Citizens (2008-2011) research was undertaken in three, concurrent strands:

Strand 1: Climate change – interventions, governance and institutional forms: investigated the current and potential roles of museums and science centres for climate change governance.

Strand 2: Climate change – science humanities interfaces: researched how different players influence the climate change debate in the political field and how the media engages, presents and communicates climate change.

Strand 3: Climate change, citizenship and media: examined ways to link museums with community media and NGOS to expand community engagement in climate change discussions and decisions.

The research used innovative empirical, participatory and media-based methods, and was conducted through online surveys, interviews, focus groups, trialogs and discourse analysis, as well as observations of museum exhibitions, programs and media forms, and the evaluation of sample interventions, programming workshops, websites and resources.

The project was led by WSU researchers (Cameron, Neilson, Hodge, Conroy, Salazar) and involved extensive collaboration with end-user institutions (and their PIs): Melbourne Museum; Powerhouse Museum (Seb Chan); Questacon; the National Science & Technology Centre (Prof. Graham Durant); Australian Museum (Dr Lynda Kelly); Liberty Science Center, Jersey City, New Jersey, USA (Wayne LaBar).

FoR of associated research

(Up to three two-digit FoRs that best describe the associated research)

21 - History and Archaeology

References (up to 10 references, 350 characters per reference)

(This section should include a list of up to 10 of the most relevant research outputs associated with the impact)

1)Cameron, F.R. & Neilson, B. (Eds.) (2015). Climate change and museum futures. New York: Routledge (Museum Research series) ISBN 978041584391-1 (six editions and ebook).

2)Cameron, F.R., Hodge, B. & Salazar, J.F. (2013). Representing climate change in museum spaces and places. Wires, Climate Change, Interdisciplinary Reviews (1), 9 – 21. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/wcc.200/abstract IF 3.462; Q1- Environmental Studies (4/93)

3)Cameron, F.R. (2012). Climate change, agencies and the museum and science centre sector. Museum Management and Curatorship, October 2012, 27 (4), 317-339. ISSN 0964-7775. This article won the best paper award in 2012 in the museum management category by a jury of academics and museum practitioners.

4)Dibley, B. and B. Neilson (2010). Climate Crisis and the Actuarial Imaginary: 'The War on Global Warming', New Formations 69: 144-159.

5)Hodge, B. (2011) "Museums and attacks from cyberspace: Non-linear communication in a postmodern world", Museum and Society Special Issue, (Cameron ed.) Hot Science, Global Citizens: The agency of the museum sector in climate change interventions, 9, (2). Retrieved from http://www.le.ac.uk/ms/museumsociety.html ISSN 1479-8360.

6)Salazar, J.F. (2011) The mediations of climate change: museums as citizens' media, Museum and Society Special Issue, (Cameron ed.) Hot Science, Global Citizens: The agency of the museum sector in climate change interventions, 9, (2). Retrieved from http://www.le.ac.uk/ms/museumsociety.html ISSN 1479-8360.

7)Salazar, J.F. (2015) Futuring Global change in science Museums and centers: A role for anticipatory practices and imaginative acts", in Cameron, F.R. & Neilson, B. (Eds.) (2015). Climate change and museum futures. New York: Routledge (Museum Research series): 90-108.

8)Dibley, B. (2011) Museums and a common world: climate change, cosmopolitics and museum practice' (Cameron ed.) Museum and Society Special Issue, Hot Science, Global Citizens: The agency of the museum sector in climate change interventions, 9, (2). Retrieved from http://www.le.ac.uk/ms/museumsociety.html ISSN 1479-8360.

Cameron, F.R. (2011). From mitigation to complex reflexivity and creative imaginaries – Museums and science centres in climate governance', Museum and Society Special Issue, Hot Science, Global Citizens: The agency of the museum sector in climate change interventions, 9, (2) Retrieved from http://www.le.ac.uk/ms/museumsociety.html ISSN 1479-8360.

10)Cameron, F.R. (2015) "Ecologizing Experimentations: A Method and Manifesto for Composing a Post-humanist Museum," in Cameron, F.R. & Neilson, B. (Eds.) (2015). Climate change and museum futures. New York: Routledge (Museum Research series), 16-33.

Additional impact indicator information

Additional impact indicator information

(Provide information about any indicators not captured above that are relevant to the impact study, for example return on investment, jobs created, improvements in quality of life years (QALYs). Additional indicators should be quantitative in nature and include:
- name of indicator (100 characters)
- data for indicator (200 characters)
- brief description of indicator and how it is calculated (300 characters).)