1. INTRODUCTION

This document sets out the strategic themes and programme for research within National Museums Scotland. Research is key to the proper fulfilment of our mission …[to]. preserve, interpret and make accessible for all, the past and present of Scotland, other nations and cultures, and the natural world.

It is vital to the understanding of our collections, their potential to support our public programmes and the intellectual reach of the Museum. Engagement with research is an important aspect of the Museum’s engagement with learning at all levels. The collaborations with internal and external partners and the dissemination of research output in appropriate forms to different audiences stimulates and increases opportunity, recognition and ambition. It can also bring significant funding opportunities.

2. DEFINITION

Research is a core activity for National Museums Scotland, vital for the good stewardship of our collections and the intellectual development of subject knowledge. Research activity is also a key component in supporting new connections between our collections and the wider public. Through exhibitions, public programmes and publications, we can share knowledge and inform a wide audience.

While research can have diverse forms; from investigation on the frontiers of knowledge, to new assessment of previous knowledge, its most frequent form within the museum is applied research to in-depth pursuit of collection information or systematic work on a topic for the benefit of an exhibition or publication. Its distinguishing feature is that there is output which can be communicated and scrutinised, at least in part, by professional peers.

3. SUMMARY UPDATE

The first Research Framework, designed to recognise the role of research within the organisation and, by setting up internal processes, to encourage further ambition, was introduced in 2004.

Since then, there have been significant developments, especially in the area of success in external recognition and project funding, particularly in the last three years.

The most important area of external recognition has been from the UK Research Councils who have granted Independent Research Organisation status to non-HE organisations with research activity comparable to universities. National Museums Scotland achieved IRO status from the Arts and Humanities Research Council in 2010.
and renewed its status with the Natural Environment Research Council in the same year. The status, which allows direct access to research council funding, is assessed regularly.

Coupled with internal re-organisation, this has led to more ambitious thinking in project development and possible collaborations with universities and other museums. For example, project funding has included a major award as part of a UK consortium from NERC to fund investigation into Scottish fossils to shed light on a gap in the history of evolution when life forms changed from water to land; support from the Royal Society of Edinburgh for *Colouring the Nation*, an investigation with Edinburgh University into Turkey red dyeing, once the basis of an industry in central Scotland; and an award winning partnership with the firm, Glenmorangie, leading to the publication of a major book on *Early Medieval Scotland* in 2012.

Training and teaching activities have included participation in nine collaborative doctorate awards (AHRC) since 2007, as well as supervision of an average of eight doctorate students per year. A fellowship for the studies in entomology, funded by the Pelham-Clinton endowment fund held in the NMS Charitable Trust (NMSCT), was awarded for the first time in 2011.

Scholarship has been demonstrated in the steady output of peer reviewed articles averaging 100 a year, especially in the fields of natural sciences and archaeology. Field work projects such as excavations at Birnie have yielded rich results for publication. Exhibition-led publications presenting scholarship in an accessible style have shed new light on the strength and depth of collections.

Major re-assessment and research into the collections was fundamental to the new permanent galleries at the National Museum of Scotland, which in turn resulted in a programme of new acquisitions to refresh and engage with the contemporary as well as greatly increased presentation of these collections on line. The new displays of the world cultures collections in particular, demonstrate how research and re-assessment has led to their rediscovery and fresh interpretation.

Overall, in recent years research has moved towards being a much more broadly based activity with greater ambitions and impact internally and externally. As the largest curatorial and conservation cohort in Scotland, we are uniquely placed to engage in multi-disciplinary research projects with internal and external collaborators. Our public engagement programmes provide significant opportunities to disseminate the results to wide audiences.

It is therefore timely to re-assess the strategic themes and proposed programme in relation to organisational priorities over the next five years. A key element of this is the need to continue the approach of the past few years to seek greater alignment of research with other priorities within the Museum, particularly the exhibitions and displays programme and our broader programmes for the public.
4. NATIONAL MUSEUMS SCOTLAND STRATEGIC PLAN 2011-2015 (UPDATE 2012/13)

Research underpins the excellence of key Museum outputs in exhibition, publication and public programmes. In addition there are two key four-year strategic actions relating directly to research in our Strategic Plan:

- Implement a rolling five year programme of research including externally funded projects, integrated with public programmes and partnerships.
- Increase research income through partnerships, consultancy and grants, and achieve an appropriate contribution to overheads.

5. NATIONAL MUSEUMS SCOTLAND PRIORITIES 2013-2018

Priorities requiring research support/collection assessment during this period will be:

- **NMoS Masterplan Phase 3, 2012-2016**

- **Further NMoS Masterplan developments (delivery dates to be confirmed)**
  Development of new Ancient Egypt gallery.
  Development of new Far Eastern gallery.
  Re-development of the Scottish galleries.

- **NMoF Masterplan Phase 2, 2013-2016**
  Planned redevelopment of two hangers and installation of new displays.

- **National Museums Collection Centre development**
  Occupation of new building and reconfiguration of stored collections in 2015.

- **Collection development programme**
  Mainly in support of requirements of NMoS Masterplan Phase 3 and NMoF Masterplan Phase 2.

- **Special exhibitions programme**
  Two major and six small exhibitions per annum accompanied by publication as appropriate (some externally generated).

- **Digital media development programme**
  Expansion of presentation of collections/research on-line.

6. RESEARCH STRATEGIC THEMES

In order to build sufficient knowledge and understanding to support these priorities, extend external academic collaborations, and maximise opportunities for profile and recognition, the previous research themes have been redefined. They remain broad but with more clearly defined sub-themes which reflect current and potential activity. It is intended that putting these themes into practice will involve close alignment with broader priorities such as display, exhibition and public programmes.
a) Collections and Collecting
This theme denotes an applied field which arises from all work regarding the collections and the Museum. It arises directly out of the investigation of NMS collections and its activities. It lies with questions concerning their acquisition, through considerations of their histories and contemporary relevance, their future development and growth. It includes the analysis, preservation and presentation of collections.

(i) Histories of Collections
(ii) Conservation, Preservation and Analysis of Collections
(iii) Re-defining Museum Practices (partnership)
(iv) Reaching audiences and digital technologies

b) Understanding the Natural World
The theme covers areas in the natural sciences, and includes its input into the understanding of wider museum collections. Its current concerns range from biodiversity to natural hazards, and include analysis and understanding of the flow of natural resources.

(i) Biodiversity
(ii) Environmental Change
(iii) Economic Geology
(iv) Natural Hazards and Risk Analysis
(v) Natural Resources and Culture
c) Material Culture: Creation and Use
This large and multi-disciplinary theme harnesses the unique potential of NMS in looking in an inter-disciplinary and cross-cutting way at collections. It focuses on the relationship between objects and social relations. It encompasses the varied perspectives brought by science and technology studies, art history and anthropology as well as new theories of material culture. It seeks to address artistic practice and living artists. It allows the assessment and communication of NMS collections as they were, and as they are now, perceived globally.

(i) Material Culture: Creation and Use
(ii) Science, Technology and Society
(iii) Social and Cultural Histories (including history of art)
(iv) Art, Design and Craft
d) Identities and Cultural Contact
The material past plays an important part in the make-up of identity at all levels from individual to national and international. This theme explores how objects link to identities and help us understand contacts between cultures. Particular foci are the transnational flows of people and transcultural objects as a means of understanding identities and cultural contacts, past and present.

(i) Power, Identity and Status (past and present)
(ii) Scottish Identity and Identity within Scotland
(iii) Shared Histories of Collections
(iv) The Material Culture of Contact
7. STRATEGIC RESEARCH PROGRAMME

Over-arching Aims
- To build an ambitious, aspirational long-term research programme with maximum impact which enhances and sustains the quality of organisational outputs and reputation.
- To align research projects with the requirements for refreshed permanent displays and the special exhibition programme.
- To develop staff skills and competence to support the programme.
- To encourage cross-overs and multi-disciplinary working to develop innovative projects.
- To maximise external funding opportunities.

Programmes
Programmes of work will engage in clusters around particular themes, with key drivers being the Museums’ overarching priorities.

Experience of the Royal Museum Project suggests that while a great deal of collection investigation and assessment was done for gallery development, the tight lead time for the galleries did not allow much serious research output until after completion. Since the completion of the galleries there have been articles, workshops and conference presentations especially on the themes of material culture, creation and use and histories of collections reflecting the re-assessments of the World Cultures collections. There has also been similar activity reflecting conservation treatments and techniques.

A similar scenario is envisaged for the Masterplans for the NMoS and NMoF with work done in connection with gallery preparation leading to subsequent output, although highlights of work in progress and collection assessment will be the subject of presentation to peers and wider audiences as appropriate while the project is in progress. The majority of the work in relation to the NMoS Masterplan Phase 3 is likely to come under the theme of Material Culture: Creation and Use; ‘Science, Technology and Society’; ‘Social and Cultural Histories’ (including history of art); and ‘Art, Design and Craft’.

Looking further ahead in the NMoS Masterplan, the final phase will see the re-development of the Museum of Scotland. Research on the reassessment and development of existing collections, together with the current academic debate on the subject, will become a key component of the plans for the new department of Scottish History & Archaeology. Much of this programme is likely to fall under: ‘Power, Identity and Status (past and present)’; ‘Scottish Identity and Identity within Scotland’ and ‘The Material Culture of Contact’.

The special exhibition programme is already driving work which either showcases and extends previous collection investigation (e.g. History of Photography) or which reflects and links to current research topic (e.g. Homelands: the Scottish military diaspora). However, this is recognised as an area for further development to achieve maximum benefit.
Acquisitions across all areas can also generate research, either to confirm their provenance and relevance (e.g. confirming that the baroque tables were owned by the Dukes of Buccleuch or the history of the components of the Hamilton-Rothschild tazza) or as the subject of further scientific investigation (such as the ‘Romer’s Gap’ collection of fossils). We expect to make some important acquisitions to display in the new galleries.

There will be significant movement of collections in this five year period to support the creation of the new galleries and the occupation of new stores. While much of this is strictly operational, it nevertheless provides opportunity for assessment and improved recording leading to better information to support more advanced investigation if desirable in future.

8. DEPARTMENTAL PROGRAMMES

While these are classified by department, there is overlap between departments, especially on major exhibition projects. There is also scope for more multi-disciplinary working across different specialisms to take advantage of the range and diversity of our collections. Two departments, Art & Design and Scottish History & Archaeology, were only created in 2012. This is reflected in their aspirations. These programmes concentrate on research projects; departments also engage in important academic teaching, supervision and examination, in particular the collaborative doctorate award schemes. These academic links are invaluable for exposure to current academic debate and in creating working relationships to negotiate further working together.

9. ART AND DESIGN

Aims

- to build the identity and scholarship of the Department especially in the area of modern and contemporary design (recruitment currently in progress).
- to lead the development of four major new galleries of Art and Design supported with public programmes and publications.
- to lead the development of special exhibitions on Art & Design for post 2016.
- to have an integrated research strategy that refers to the longer histories of designed objects and will explore questions centred on design identity, looking particularly at the dialogue between art, design, science and technology.

Current Research Projects

NMoS Masterplan phase 3, 2013-2016

- Research related to the development of the galleries will largely occupy the period from 2013-16. The multi-disciplinary nature of the galleries will relate to the research sub themes of Material Culture: Creation and Use: ‘Social and Cultural Histories’; and ‘Art, Design and Craft’.

Funded publication project


RSE Funded collaborative research project

- Colouring the Nation: Turkey Red and other decorative textiles with Edinburgh University.
Special Exhibitions
- Art & Design will aim to have a conspicuous presence in the NMS exhibition programme, particularly from 2018. For instance, it is expected that the extra resource allocated to the dress and textile collection will generate exhibitions that exploit the strengths of the collection. Each exhibition will aim to have an accompanying book or catalogue and a conference that will yield a scholarly publication. Thus far, there is one exhibition fixed in the calendar, *Bernat Klein* (2017) but an exhibition topic on the Dukes of Hamilton is being investigated (for the period after 2018).

Peer Reviewed Articles
- Present production is low at one or two per annum. With full staffing, Art & Design should aim to have eight to ten peer reviewed articles per year as well as publications of accessible scholarship accompanying exhibitions.

10. SCIENCE & TECHNOLOGY

Aims
- to lead the development of six major new galleries of Science & Technology supported with public programmes and publications.
- to lead the development of special exhibitions on Science & Technology.
- to develop the scholarship of the department with aspiration towards securing a major AHRC grant and increased output of publication.

Current Research Projects
  NMoS Masterplan phase 3, 2013-2016
  - Research related to the development of the six galleries will largely occupy the period from 2013-2016. The multi-disciplinary nature of the galleries will relate to the research sub themes: ‘Science,Technology and Society’, ‘Material Culture: Creation and Use’, and to a lesser extent, ‘Scottish Identity and Identity within Scotland’.
  RSE Funded workshop
  - *ReINVENT: Reconnecting and Recreating 19th Century Scottish Textile Manufacture* with University of Glasgow.

Special Exhibitions Programme
- Science & Technology will be active contributors to the special exhibitions programme during this period including a proposed exhibition on *History of Photography* in 2015. Post completion of the NMoS Masterplan phase 3, the Department intends to be a regular contributor to the special exhibition programme. Various ideas are already being considered, such as a research-led special exhibition featuring the science and culture of robots, for future further investigation.
Publications

- Present production of peer reviewed articles averages four per year. However, because of the paucity of academic publications in this field, publications of accessible scholarship such as exhibition books or more general museology offer better possibilities for increased output, aiming at an average of two per year.

Research Projects – in development

‘Science, Technology and Society’

- Development of a funding application to RSE for workshops to assess the Chambers wood engraving block collection. Partners will include the Universities of Dundee, St Andrews and Reading. These workshops will inform the subsequent development of a major AHRC research bid post-MP3 (i.e. 2017).
- Development of collaborative research project with important international partners, focused especially on Australasia and the Far East, on the Scottish Engineering Diaspora with view to output (conference, publication) in 2018.

11. SCOTTISH HISTORY AND ARCHAEOLOGY

Aims

- to build the identity and scholarship of the Department to achieve a balance in the scholarship across all sections.
- to build the research aspirations in the field of Scottish history with the intention of supporting the redevelopment of the Museum of Scotland in due course.
- to look for external funding opportunities to support relevant research for the redeveloped Museum of Scotland.
- to define and develop the future programme for archaeology field work in relation to the national collection.
- to support the special exhibition programme regularly.

Current Research Projects

Glenmorangie partnership

- The current phase of the major fully-funded Glenmorangie Research Project into material culture of early medieval Scotland culminates with the exhibition Creative Spirit opening October 2013, having already produced highly significant outputs such as the book ‘Early Medieval Scotland’. Negotiations are underway with Glenmorangie to continue major sponsorship into research for and production of exhibitions on the ‘Making of Scotland 300AD – 1200AD’.

Birnie excavation

- The final phase of post-excavation analysis and publication of Birnie, a major Iron Age site in Moray, which will redefine the understanding of the Roman impact on the Scottish Iron Age, is jointly funded by Historic Scotland. Scottish diaspora: The Scottish Empire at War

- The Royal Society of Edinburgh supported the workshop and conference on this topic leading to the exhibition planned for 2014. ‘Hidden in Plain Sight’

- An investigation into ethnographic collections in military museums, has secured RSE funding. This is in collaboration with World Cultures.
Prehistory

- The Prehistory Section is undertaking a suite of research initiatives including investigating the use of jet, faience and amber, gold, bronze, flint and Neolithic/Bronze Age pottery; outputs include major monographs, public lectures and future input to redisplay of Scotland Galleries. We are also leading a major study on the Beaker People with academic partners. Output: academic publications.

Roman and Iron Age

- The Early History Section is focused on the theme of Rome beyond the Frontier which includes re-evaluating the Roman finds from Newstead and the Traprain Silver project which will be completed in 2016/2017. Output: academic publications.

Special Exhibition Related Work

- The Department is due to make major contributions to the special exhibition programme in this period and intends to continue with an increasing emphasis on subjects ranging across the whole of the period ranging from pre-history to the present day. Research-intensive exhibitions currently in the programme include; Mary, Queen of Scots; Homelands, Scotland’s Empire at War; and, in partnership with the British Museum, The Celts. Future possibilities include subjects such as the Jacobite era and life on the Roman frontier.

Research Projects - in development

Redevelopment of the Museum of Scotland

- The creation of a single, unified Scottish History & Archaeology departmental structure allows us to take a fresh look at the displays, combining the methodologies of archaeology and historical study to create a more ‘seamless’ approach. As 2013 is the first year of the new Department, this work is in development but the intention is to develop a programme with the potential to attract external funding for the research stage.

‘Identities and Cultural Contact’

- We are developing in partnership a major study on gold in the European Iron Age triggered by the find of the Iron Age gold torcs which has potential for submission to AHRC.

Publications

- 30 peer-reviewed articles on average per year plus publications to accompany exhibitions.

12. WORLD CULTURES

Aims

- To build recognition of the character and scope of the World Cultures collection which remain largely under-published through two strands of activity:
  - series of catalogues addressing the range of the collections, and
  - developing exhibitions and exhibition related publications.
• To use above to feed into recognition and support for new galleries: Ancient Egypt; China, Japan and Korea; and interdisciplinary exhibitions (textiles and clothing).
• To develop collaborative and interdisciplinary research projects by linking with universities and other museums to bring greater recognition of the collections, as well as NMS research culture and potential. Such projects include: the Pacific Collections Review; Missionary Collections Network; the RAI Film Festival and Conference; and the EU HERA Cultural Encounter project Perceptions and Realizations of Islam in Museums.
• To secure external funding where possible. AHRC has been identified as a major source of future grants. Successful application has already been made for smaller funds to the Esmée Fairbairn Trust, and the RSE. The intention is to have an incremental approach which allows the strengths of possible strands of enquiry and potential partners to be assessed at an early stage.

Current Research Projects
Main research themes are Collections and Collecting, Material Culture: Creation and Use, and Identities and Cultural Contacts.

Histories of Collections
• Ancient Egypt – reassessing the breadth and depth of collections, previous interpretations and approaches, and connections with other collections. Output: A.H. Rhind potential temporary exhibition (timing tbc), conference presentation and articles.
• China, Japan and Korea – new publications on the collection which give it an identity beyond Scotland. Output: Kabuki: Japanese Theatre Prints exhibition, and publication (2013); rare Japanese prints and paintings in Scotland; two articles; Introduction to Chinese Collections at NMS (timing tbc).
Conservation, Preservation and Analysis of collections
• Analysing Duleep Singh jewellery (Charisma funded). Output: article and results to be part of exhibition of Duleep Singh/John Logan in Orkney and NMS.
• Gold Research using scientific analysis to investigate the significance and cultural context of NMS's Egyptian gold objects (CNRS funded). Output: conference, research workshop, articles subsequently. Re-defining Museum Practices (partnership)
• HERA Cultural Encounter Perceptions and Realizations of Islam in Museum, with Berlin, Amsterdam and York. Grant application through to final round, result to be known soon. Output: if successful potential exhibition projects; conference; book.
• Orkney Museums partnership Output: John Rae exhibition (2013); Duleep Singh/John Logan exhibition (2014) with conference/papers.
The Material Culture of Contact
• Missionary Collections Network (AHRC funded) meets three times a year. Output: workshops and peer reviewed articles.
• Hidden in Plain Sight (RSE funded) Output: with Scottish History & Archaeology collaborative research networks with intention of developing, larger grant submission to AHRC.
• Fiji Arts. NMS is a project partner on AHRC funded project. Output: Fiji edited volume (2014); journal articles (2015); possible small exhibition with museum publication.

Shared Histories of Collections

• Pacific Collections Review NMS/Aberdeen/Glasgow/Perth working with Centre for Pacific Studies at St Andrews University. Output: collection review (2014) with intention of leading to major application to AHRC.

Research Projects - in development

Power, Identity and Status (past and present)

• Develop project on Egypt and Empire using NMS collections and fieldwork to explore diversity and multiculturalism in the ancient world. Potential collaborative fieldwork project with the British Museum would excavate and record the Ramesside temple at the Egyptian imperial outpost of Amara West in Sudan. Output: academic publication; peer-reviewed articles; conference; and potential gallery displays (2014 onwards).

Publications

• Aspiration is to achieve 12 academic/peer-reviewed publications per year extended by on-line and book publication of catalogues of collections on an annual basis.

13. NATURAL SCIENCES

Aims

• To maximise the potential of the natural science collections to link with current relevant academic interests and provide a channel of public engagement.
• To lead the development of special exhibitions on the Natural World which benefit from research outputs.
• To partner with the universities in developing co-operatives for utilizing new technologies, for example in CT scanning and molecular systematic techniques.
• To seek external funding for large scale projects. To date the Natural Environment Research Council has been the principal source of funds. We have received two NERC awards in the past three years. We shall continue to pursue these major awards (ranging from £200-750k for three year projects) over the next five years with the aim of attaining continuous NERC support of the department. We will also seek smaller grants from other sources as appropriate.

Current Research Projects

Research Theme: Understanding the Natural World

• Many of the projects shown build on previous work and relationships in a long trajectory of investigation. The intention is to follow the model of the TWEED project (see below) and build a critical mass in particular areas to make major submissions for external funding and maximum impact. However, given the competition for major grants, lines of research and collaboration will continue without such funding but with reduced scope and output unless a further application is successful.
‘Environmental Change’

- TWEED: Tetrapod World – Early Evolution and Diversity: This is our biggest externally funded research project to date; with funding from NERC to support a consortium of National Museums Scotland, the British Geological Survey and the universities of Cambridge, Leicester and Southampton. It will investigate early terrestrial fossils from the Tweed Basin over a four year period. We have also been successful in securing external support to acquire a major fossil collection, critical to the project. It is anticipated that the work will result in the discovery of many new kinds of fossils that will help bring about a better understanding of the early transition from life in the water to life on land.

  Output: Scientific papers, potential exhibition and on line presentation.

Tropical Cloud Forests.

- This is an investigation of the effects of climate change in the short term (last five to ten years) on insect species distribution, particularly using hoverflies as indices of climate/environmental change. This project builds directly on species work already completed on changing patterns of hoverfly distributions in Scotland. Partners are in place to build a major project for submission to NERC.

  Output: Scientific publications (with significant increase if external funding secured).

Triassic reptiles and terrestrial ecosystems

- This is another facet of long-term research into the effects of changing environment on species distribution and biodiversity, the effects of greenhouse climates in Deep Time, and how they shaped modern day terrestrial ecosystems. Some funding from the Chinese National Science Foundation is in place with major NERC grant proposals planned in this period. The overall programme involves multiple international partners with many integrated components.

  Output: Potential special exhibition (e.g. Ancient Chinese Sea Monsters) with popular publication; scientific publications in the past five years - 8 published, 1 in press and two more in manuscript form.

‘Biodiversity’

- Scotland’s Seas in association with MASTS (Marine Alliance for Science and Technology for Scotland) are looking at the exploration of Scottish Seas (which are critical to Scotland’s energy and food resource) and documentation of their biodiversity, using our collections.

  Output: academic publications and potential exhibition.

- Molecular evolution, intraspecific variation, and biogeography of mammals including primates. Submissions to NERC planned in this period.

  - Primate genome project: these are some of the highest profile research programs in biology today attracting significant funding. We are partnering with a variety of institutions with the intention of building a major bid.


  - Eurasian rodents: rodents are the classic laboratory animals (e.g. for drug development and investigating the epidemiology of diseases) and understanding the changing distributions of wild populations and genome mapping are key programs for Biological and Medical Research Councils. Our mammal collections offer
raw material and we are engaged in seeking partners for further development.
Output: Scientific publications.

‘Economic Geology’ and ‘Natural Hazards’
- Biominerals: the unique role of biological processes in the formation of minerals is an increasingly important field. This is the likely direction that research in the Earth Systems Section under its new leadership will take in the next 5-10 years. Microbes are probably responsible for giving Earth a unique suite of minerals in our solar system. They can also be used to ameliorate toxic substances in, for example, disused mines.
Output: Potential exhibition and scientific publications.

Publications
- Publications: minimum of 30 peer-reviewed articles plus 20 accessible scholarly publications per year.

Jane Carmichael
Director of Collections
15 March 2013