



# Annual Report 2015

# OUR VISION

NTNU – Knowledge for a better world

The NTNU University Museum  
embraces the world

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**COVER PAGE:** Bear skull from Saltfjell in Ytre Namdal, which originated from a Sami bear grave from the 1500-1600s, found in 1937. The skull was part of a whole skeleton, but only the skull was sent to the Museum. The skull has a brass chain attached to one jawbone and a canine has been broken off



## REVITA – CONSERVATION AND SAFEGUARDING SEVERAL MILLION HOLDINGS

The NTNU University Museum completed the Revita project at the end of 2015. The project has been the Museum's and NTNU's decade-long project to protect, conserve and improve the accessibility of the Museum's scientific collections.

In 2003, the Office of the Auditor General of Norway found deficiencies related to the safeguarding and conservation of holdings at state-owned museums. NTNU and the Museum adopted the Revita project to rectify these shortcomings.

The project involved recording, conserving, archiving and digitizing millions of collection holdings and documentation material. The most important effort was for the collections related to archaeology, zoology, botany and geology.

At the same time, physical safeguards and payment for security and infrastructure measures for existing collections were implemented.

The Museum also developed working procedures, policies and an IT infrastructure for handling the collection that were better suited to the Museum's organizational and technological framework. Internal expertise in the handling of the collections has been strengthened in collaboration with the Museum's Departments.

The project had a budget of NOK 72 million over the project period, NOK 54 million of which was covered by NTNU and NOK 18 million by the Norwegian Ministry of Education and Research. In addition, there was a significant contribution from trainees and staff from the Norwegian Labour and Welfare Administration, as well as from the Departments themselves. In the end, the project required 240 work years over its 10-year period, but was completed using only half of its original estimated budget of NOK155 million.

## OUR ROLE IN SOCIETY

« The NTNU University Museum will develop and share knowledge about culture and the natural environment, as well as safeguard and preserve its scientific collections and make them available for research, curation and outreach activities.»

### A year of consolidation

2015 was the penultimate year in our current strategy period. The greatest and most important challenges in this period have been to:

- Develop outstanding research in the areas where the Museum has expertise and special qualifications.
- Play a key role in NTNU's goal to increase and improve community relations and visibility.
- Develop a creative working environment, and create professional challenges that make the Museum an attractive workplace.
- Meet the challenges of budget cuts by strengthening earnings, not by cost cutting.

Although the NTNU University Museum has only been moderately affected by NTNU's merger with the University Colleges of Gjøvik, Sør-Trøndelag and Ålesund, this process as well as efforts surrounding the Campus development project have made substantial demands on the organization in 2015.

### Safeguard, conserve and make accessible

The Revita project was initiated to conserve, safeguard and make the Museum's natural and cultural history collections accessible. The project has greatly increased staff expertise at the Museum. This particularly applies to the further development of work procedures, policies and the establishment of robust IT systems. With a completed cost that was half of the estimated budget, it seems fair to say that the project's results were good. 68,4 per cent of the natural history and 94,5 per cent of the cultural history collections are now digitized. These will be available for the national and international research community. Ensuring adequate access to good storage magazines for parts of the collections remains a major challenge.

### Outstanding research

Half of all scientific publications from the Museum are based on scientific collections or long time series data. This is in keeping with our goals, and supports a clear trend where research increasingly relies on collections from university museums. In 2015, the Museum further developed its expertise in methods for genetic analyses, radiocarbon dating and isotope analyses. This was achieved both through the recruitment of outstanding young scientists and through the additional development of internal expertise and infrastructure. These are measures we expect will deliver even better achievements in research, grant applications and international cooperation in the years ahead.



## Community relations and visibility

NTNU and the University Museum have shared ambitions concerning public outreach and education about the University's areas of expertise. Although the University Museum had nine exhibitions and stable visitor numbers in 2015, we need to enhance our measures that make NTNU's academic breadth visible. The Museum has implemented several measures to increase the Museum's strategic scope of action. These yielded positive results in 2015, but the scope of action is simply not enough for the Museum to develop attractive exhibitions and arrangements on its own in appropriate locations, and thus achieve its objectives.



## Competition for resources

The NTNU University Museum's finances are largely influenced by activities paid for by commissions or collaborations. These types of activities are significantly affected by economic cycles. The field archaeological excavations that were financed in connection with the Armed Forces' new fighter base in Ørland were therefore extremely important, both financially and academically. More of these kinds of major public commissions would significantly improve the ability of the Museum to achieve its strategic objectives in the years ahead.

## Changes in the management team

The head of the Department of Archaeology and Cultural History completed her fixed-term contract, and a new head was in place in August 2015. A new head of the National Laboratories of Age Determination was in place at the beginning on 1 January 2015, and the Department of Public Outreach and Exhibitions began with a new permanent head this summer.

The NTNU University Museum has made progress in some areas in achieving its strategic objectives, particularly with respect to targets for making the collections accessible and the use of collections in scientific publications. Access to safe and appropriate storage magazines for parts of the Museum's collections remains a challenge. During this period, the Museum has recruited research personnel in keeping with its staff recruitment plans, and is well positioned to develop excellent research in a number of areas.

*Museum Director Reidar Andersen*

## II. THE ORGANIZATION AND 2015 HIGHLIGHTS

The NTNU University Museum is a part of the Norwegian University of Science and Technology (NTNU), which reports to the Norwegian Ministry of Education and Research.

The NTNU University Museum is one of six university museums in Norway, and is a unit at NTNU, at the same organizational level as the University's faculties.

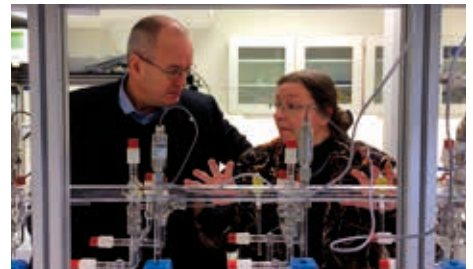
The Museum's exhibitions, collections, museum management and three of its Departments are located in Kalvskinnet near the Trondheim city centre, while the National Laboratories of Age Determination are located on NTNU's Gløshaugen campus. The Ringve Botanical Garden is located in Lade, which is part of Trondheim. The Kongsvoll Alpine Garden is located in Dovre in the mountains south of Trondheim.

### SOME 2015 HIGHLIGHTS

**At nearly 92,000 m<sup>2</sup>, the archaeological excavation in connection with the new fighter base in Ørland**, is the largest excavation project by area ever undertaken by the NTNU University Museum. More than 1,000 objects have been recovered, and a complete farmyard has been discovered dating from the Migration Period, or the first millennium AD.



**The National Laboratories of Age Determination** were reopened in 2015 after shifting over to new dating technology. The photo shows NTNU Rector Gunnar Bovim in conversation with the laboratory head Marie-José Nadeau in connection with the Rector's visit to all NTNU Departments in 2015.



**The exhibition "Young scientists meet Mausund"** was a collaborative initiative between the research and media classes at Byåsen Upper Secondary School and the NTNU University Museum. The exhibition *Continuous change - from the Ice Age to the Future* had its beginnings in a project entitled "Research in collaboration" financed by the Research Council of Norway. Both opened in 2015.



**Two projects succeeded in the tough competition for research funding** with the Research Council's basic research programme "Frimedbio" and the environmental programme "Environmental Research".

**A thorough restructuring of the Archaeology programme at NTNU** was completed in 2015, with the aim of reducing the dropout rate. The new Archaeology curriculum has received positive feedback from all levels.



### MUSEUM BOARD 2015

Chairman **Peter Johan Schei** (External Representative)  
**Berit Rian** (External Representative)  
**Siri Hunnes Blakstad** (External Representative)  
**Harald Jacobsen** (External Representative)  
**Eva Lindgaard**  
(Technical and Administrative Staff Representative)  
**Elisabeth Stur**  
(Temporary Scientific Staff Representative)

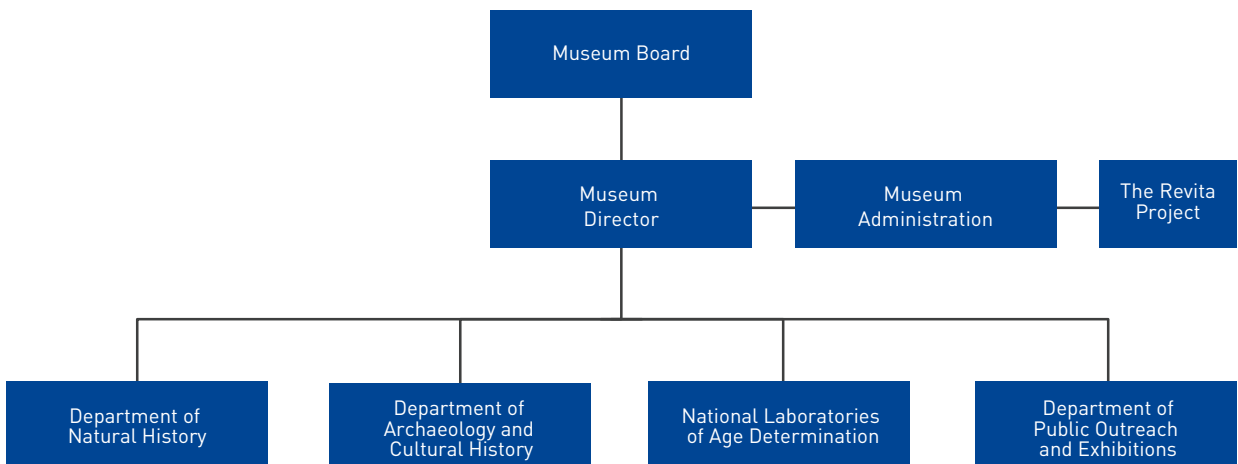
**Per Gustav Thingstad**  
(Scientific Staff Representative)  
**Torbjørn Ekrem**  
(Scientific Staff Representative)  
**Vibekke Vange** (Scientific Staff Representative)  
**Caroline Fredriksen** (Student Representative)

### MANAGEMENT TEAM

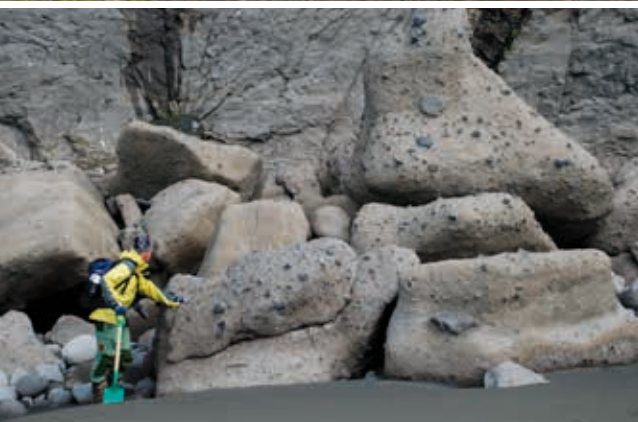
**Reidar Andersen**, Museum Director  
**Solveig Bakken**, Research and Collections Manager  
**Ivar Margido Jensås**, Head of Administration  
**Tove Eivindsen**, Head of Communication  
**Marie-Josée Nadeau**,  
National Laboratories of Age Determination

**Birgitte Skar / Bernt Rundberget**,  
Department of Archaeology and Cultural History  
**Morten Sylvester / Randi Wenche Haugen**,  
Department of Public Outreach and Exhibitions  
**Torkild Bakken**, Department of Natural History

### ORGANIZATIONAL STRUCTURE



### DEPARTMENTS



Taking samples on Jan Mayen.

Continuous change - from the Ice Age to the Future



#### THE DEPARTMENT OF ARCHAEOLOGY AND CULTURAL HISTORY

The National Laboratories of Age Determination date archaeological, geological and organic material through radiocarbon dating ( $^{14}\text{C}$ ) and dendrochronology dating (tree-ring analysis). The Department conducts research in both dating methodologies and their application.

**In 2015:** The National Laboratory for Carbon Dating was reopened in 2015 after switching over to a new dating technology. A great deal of work was focused on further expanding the quality of the preparation lines. The lab resumed accepting samples from external customers.

The staff at the National Laboratories was strengthened by the addition of an adjunct professor, along with formal affiliations with trainees and visiting researchers. This has resulted in strong research activity and greater capacity with respect to efforts to upgrade the carbon dating laboratory.

	2011	2012	2013	2014	2015
Carbon dating	1 493	1357	0	0	364
Dendrochronology dating	461	627	307	153	302

After reopening in the autumn of 2015, 364 carbon samples were dated with good results. There were also samples that were too small or too poor in quality to be dated. The number of dendrochronological samples (analysis of growth rings) that provided results almost doubled compared to 2014 with 302 samples in 2015.

#### THE DEPARTMENT OF PUBLIC OUTREACH AND EXHIBITIONS

The Department of Public Outreach and Exhibitions (SF) is responsible for producing and maintaining the Museum's exhibitions, coordinating public events and school programmes and other educational offers. The Department also manages the Museum Shop.

**In 2015:** Work on the exhibition *Continuous change—from the ice age to the Future* gave natural and cultural history researchers a good arena in which to develop interdisciplinary collaboration. The project related to the Mausund exhibition provided an opportunity to explore other educational venues and methods outside of the classroom. In all, 10,511 kindergarten and schoolchildren attended educational programmes organized by the Department throughout the year. The educational role play "A world of plastic", which was used to teach students about consequences of trash in the ocean, was prepared in cooperation with Alibier A/S and the Norwegian Environment Agency.



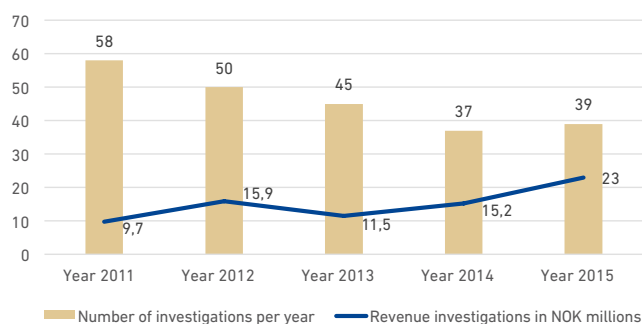
### THE DEPARTMENT OF ARCHAEOLOGY AND CULTURAL HISTORY

The Department of Archaeology and Cultural History (SAK) studies prehistoric, historic, maritime and Sami archaeology. The Department conducts archaeological excavations in accordance with Norway's Cultural Heritage Act, hosts the Museum's conservation laboratory, and is responsible for the cultural history collections and teaching in the professional archaeology programme.

**In 2015:** The level of research activities has been high with a great deal of participation in conferences. Several applications were submitted to the Research Council of Norway, and publications were a priority. The Department's heritage management activities as measured by the number of excavations were small, but turnover was higher than in recent years due to the excavation in Ørland.



#### Heritage management investigations



A great deal of new knowledge has emerged regarding Iron Age settlements in the region as a result of the Ørland project and excavations on Gravråksmoen in Melhus. Several beautiful discoveries have come in during the year, especially after a search with metal detectors. The amount of finds adds to the growing pressure on the Museum's conservation and collection resources. The new curriculum for the Archaeology programme has been developed and implemented.

Archaeological investigations on land and at sea, were done under the authority of public heritage management and petrogllyph management.

### THE DEPARTMENT OF NATURAL HISTORY

The Department of Natural History (SN) manages the Museum's natural history collections. The Department conducts research in biogeography, biosystematics and ecology, with an emphasis on conservation biology. The two botanical gardens are a part of the Department.

**In 2015,** the Department has increased its number of scientific publications and number of applications to the Research Council of Norway, the EU and other European research arenas. Participation in international forums has also increased. *The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)* and the *Global Biodiversity Information Facility (GBIF)* are the most important of these. Continuing extensive public outreach activities contribute positively to the Museum's community relations. Work on the scientific collections took a large step forward when the Department began using tools offered by the University Museums' shared IT organization, MUSIT.

Taxidermist Guus Welleesen with the skeleton of a redshank.



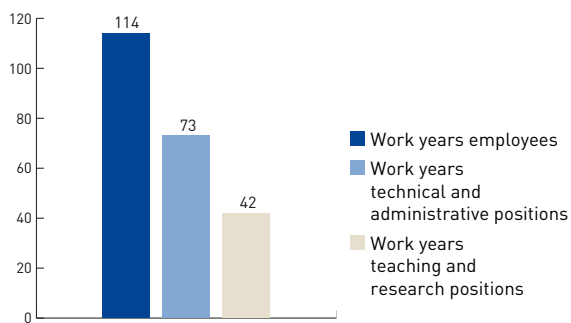
## II. THE NTNU UNIVERSITY MUSEUM'S KEY FIGURES

In 2015, the NTNU University Museum had 114.2 work years divided among 122 positions.

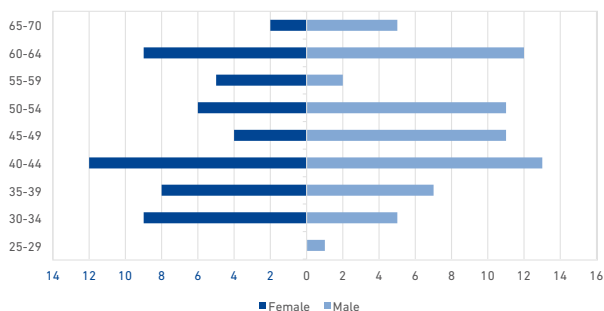
### Trends in number of work years

	2011	2012	2013	2014	2015
Number of work years					
NTNU University Museum	118.1	113.4	110.6	111.0	114.2

### Work years 2015 in total and by position categories

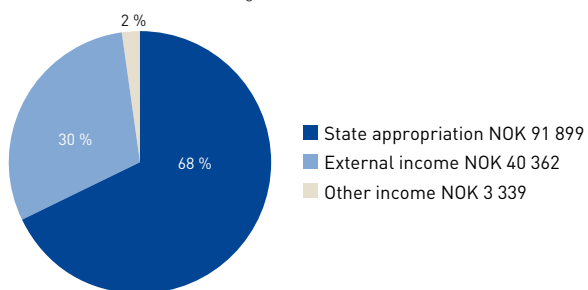


### Age and gender distribution among staff at the NTNU University Museum in 2015

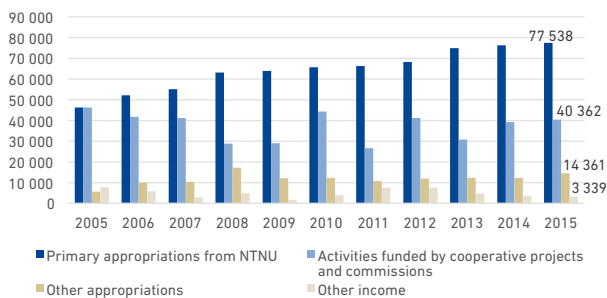


In 2015 the NTNU University Museum had revenues of NOK 135.6 million. This was an increase of NOK 4.4 million, or just over 3% from last year. The increase was mainly due to increased funding from NTNU.

### Income of NOK 135.6 million comes from two main sources:

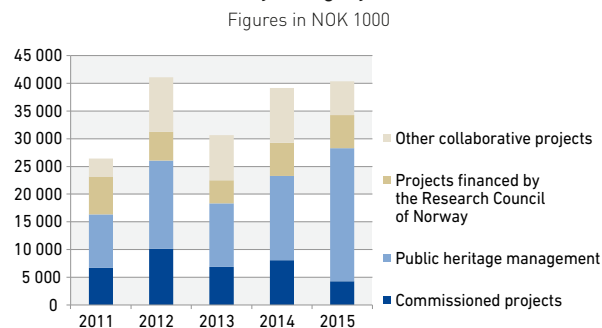


### Sources of income have changed greatly over the last 10 years

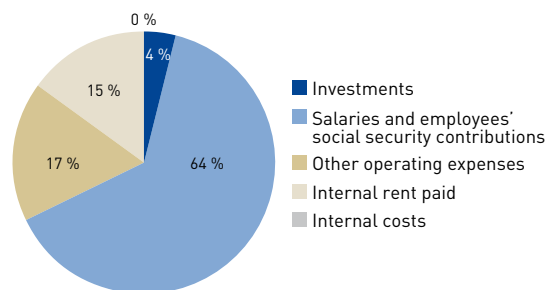


Externally funded income varies widely from year to year, particularly when it comes to revenues from public heritage management, which is cyclically determined. The NTNU University Museum has little opportunity to influence the scope of public heritage management activities.

### Trends in income from externally financed activities by category



### 79% of the NTNU University Museum's appropriation is tied up in payroll expenses and rent



The Museum's costs in 2015 totalled NOK 138.7 million, and increased by NOK 10.1 million or 7.8% compared to 2014. Labour costs increased by NOK 7.6 million and investment costs by about NOK 3.6 million.

The NTNU University Museum's income statement for 2015 shows a loss of NOK 3.098 million. The loss can be divided into NOK 2.005 million from the allocation from the Strategy and Restructuring Funds (RSO) from NTNU, and NOK 1.093 million from the Museum's own annual operating budget.

## RESEARCH THAT STANDS OUT FROM THE COMPETITION

The Museum has invested a great deal of effort over the long term to improve the quality of its research through networking, building expertise and project applications with accompanying evaluations. The Museum's biosystematics group stood out in the tough competition and was included in NTNU's efforts to support top-level research. In 2015, the Museum was awarded an Onsager Fellow position, and an adjunct professor at the International Chair level in this field.

The NTNU Onsager Fellowships are designed to recruit young, internationally recognized researchers to strengthen university research groups. The Museum received 54 applications for this position. Two applications were submitted to the EU's Horizon 2020 programme, one as a coordinator and one as a partner. The NTNU University Museum was a partner in two applications to the ERA-Net (European Research Area) and one initiative on the establishment of an European Cooperation in Science and Technology (COST) action. Two projects were awarded, one funding from the Research Council of Norway's environment programme "Environmental Research" and one from its basic research programme "Frimesdrio". International activity increased both in the form of presentations at international conferences and scientific publications in collaboration with international counterparts.

### RESEARCH TOPIC: BIOSYSTEMATICS AND EVOLUTION

Biosystematics is the study of variance, through the description of biological diversity and the understanding of the processes that lead to evolutionary change. This encompasses naming species, deducing the relationship between different organisms, gaining an understanding of how species formation occurs, and analysing the history of all living creatures on Earth.

In 2015 the Biosystematics and Evolution Group had higher academic production in the form of publications than in the previous five years. Efforts to develop infrastructure to increase the use of next-generation sequencing techniques has been a high priority. Projects on mosses, lichens and invertebrates in freshwater and in the ocean have also been a high priority. The integration of the Museum's scientific collections into research has been significantly enhanced. The Group's activities are closely linked to DNA barcoding through the national infrastructure that the Museum heads (the Norwegian Barcode of Life - NorBOL).



The Red-Line Sapphire Blue butterfly (underside, *Epamera sidus*) from Blantyre, Malawi, caught in February 1966

### RESEARCH TOPIC: HUMANS, NATURE AND LANDSCAPE INTERACTIONS

Research on the interaction between humans and their natural environment is the key to understanding how people have influenced the natural environment for thousands of years, and how changes in nature have shaped culture. Conservation biology research attempts to understand the factors that determine species distribution in time and space, how environmental variations influence the structure and dynamics of various populations, communities and habitats, as well as how to preserve biodiversity and ecosystem services at all levels.



In 2015, the Conservation Biology Group worked with conservation biology projects on mires, sea trout and wild salmon and grouse along with the sustainable grazing of domestic and wild animals in the mountains and forests. Members of the group have contributed to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and are heavily involved in NTNU's strategic research area "Sustainability". The interdisciplinary project *Snow Patch Archaeological Research Cooperation* (SPARC) works with the effects of climate change, and deals with archaeological, biological and geological relics in snowdrifts in the mountains.

Trapping and tagging sea trout in Tosen fjord

## RESEARCH TOPIC: PRESERVATION IDEOLOGY AND MUSEOLOGY

Preservation ideology provides the theoretical principles upon which legal and applied environmental protection is built. Museology involves the processes that contribute to the establishment, maintenance, and changes in museums, historically and today.

**In 2015:** A doctoral project on maritime cultural heritage was completed in 2015, in which the discovery of sunken ships was studied as a dichotomy in Norway's cultural heritage management. The results provide recommendations related to the challenges posed by sunken ships as cultural heritage objects. The theme for a completed postdoctoral project was museological issues at Norwegian university museums, with emphasis on the institutions' management of their collections.

## RESEARCH TOPIC: MATERIAL CULTURE AND OTHER FORMS OF CULTURE

This research topic addresses artefacts and other forms of culture expressed through archaeological material and places them in the context of their landscape origins, continuity, change and variation in a Norwegian, European, and global context, along with theories that have been formulated in this field.

**In 2015:** The 2015 field season was characterized by an increase in the number of archaeological field surveys following metal detector finds of significant and rare artefacts. The finds made significant contributions to the existing body of knowledge. Larger excavations at Brekstad, Ørlandet and Gravråksmoen in Melhus provided new knowledge about the settlement history and landscape use in the Bronze Age and early Iron Age.

The project *Religion and money—economy of salvation* uses archaeological and historical and literary sources for analysis of coin finds in Scandinavian churches and monasteries from the Middle Ages. The project is in its final stages and work in 2015 has been linked to workshops and the writing of articles.



From investigations at the Ørland fighter base.

## RESEARCH TOPIC: TECHNOLOGY-BASED METHODS

Conservation technology entails the conservation and safeguarding of movable and immovable cultural heritage artefacts for future generations. It is founded on the study of scientific and technological subjects to increase our understanding of the materials of cultural artefacts, their construction and deterioration, and the development of technology-based methods of conservation and strategies for safeguarding them. Archaeological fieldwork methodology consists of the methods and strategies for documenting and collecting archaeological data. This includes excavation techniques, the use of geographic information systems to measure structures and finds, geophysical information systems and other methods of distance measurement, and photographic and field conservation techniques.

**In 2015:** Two doctoral projects worked on remote sensing methods in an archaeological context. One project addressed the use and development of geophysical methods, with the objective of increasing the use of non-destructive methods for the development of knowledge in archaeological research and management. The second is related to NTNU's Centre for Autonomous Marine Operations and Systems (AMOS), and deals with the use of autonomous technologies (robotics) to detect and apply diagnostic tests to archaeological remains on the sea floor. The equipment and methods have proven to be particularly suitable for mapping shipwrecks at a detailed level. The project encompasses marine archaeology, marine cybernetics and marine biology.

## RESEARCH TOPIC: AGE DATING METHODOLOGY

Radiocarbon ( $^{14}\text{C}$ ) and dendrochronology research contributes to the enhancement of the precision of dating methods and supports its expansion into other application areas. The methods are employed in a series of research projects and generate new knowledge in a range of fields such as scientific and cultural anthropological studies of climate and environmental development, building history, and changes in landscapes, cultures, and settlements.



**In 2015:** The research project *Climate and glacier variations since the Last Glacier Maximum in Jan Mayen (ClimJaM)* was begun in collaboration with the Geological Survey of Norway and three European universities. The project examines variations in climate and glaciers on Jan Mayen beginning with deglaciation after the last Ice Age, about 15,000 years ago to the present day. Lake sediments and moraines are being investigated and their formation is being dated using both  $^{14}\text{C}$  and cosmogenic nuclide dating.

Collecting rock samples on Jan Mayen



## PARTICIPATION IN PROJECTS PARTIALLY FUNDED BY THE RESEARCH COUNCIL OF NORWAY AND THE EEA

Overall programme in parentheses.

### NTNU UNIVERSITY MUSEUM AS PROJECT MANAGER/COORDINATOR:

- NorBOL** NorBOL Norwegian Barcode of Life (FORINFRA).  
Museum contact person: Torbjørn Ekrem
- MANECO** MANaging ECosystem services in low alpine cultural landscapes through livestock grazing (Miljø2015).  
Museum contact person: Gunnar Austrheim
- SPARC** Snow Patch Archaeology Research Cooperation—The effects of climate change on vulnerable high mountain heritage environments (Miljø2015).  
Museum contact person: Birgitte Skar
- INVAFISH** Invasive freshwater fishes, dispersal vectors, impacts and management (Miljø2015).  
Museum contact person: Anders G. Finstad
- EBAI** Environmental Barcoding of Aquatic Invertebrates (Miljø2015).  
Museum contact person: Torbjørn Ekrem
- Sjokoladens søte lille hemmelighet** (Chocolate's sweet little secret)(PROFORSK).  
Museum contact person: Reidar Andersen

### AS A PARTICIPANT:

- ForBio** The Research School in Biosystematics - towards permanent existence (UNI-MUSEER).  
Museum contact person: Hans K. Stenøien
- Forskning i fellesskap** (Research in collaboration) (UNI-MUSEER).  
Museum contact person: Birgitte Skar
- Musvit** Museums' knowledge, museum science – A museological initiative from university museums - The way forward (UNI-MUSEER).  
Museum contact person: Axel Christophersen
- Religion and money, Economy of salvation in the Middle Ages** (FRIHUMSAM).  
Museum contact person: Jon Anders Risvaag
- ClimJaM** Climate and glacier variations since the Last Glacier Maximum in Jan Mayen (KLIMAFORSK).  
Museum contact person: Eiliv Larsen
- MIRACLE** Mires and climate: towards enhancing functional resilience of fen peatlands (EEA).  
Museum contact person: Kristian Hassel
- DNA barcoding of cryptogams**, including biosystematics studies of selected groups (EEA).  
Museum contact person: Mika Bendiksbj
- SFF AMOS** Centre for Autonomous Marine Operations and Systems (SFF).  
Museum contact person: Øyvind Ødegård
- SFF CBD** Centre for Biodiversity Dynamics (SFF).  
Museum contact people: Hans K. Stenøien and Anders G. Finstad

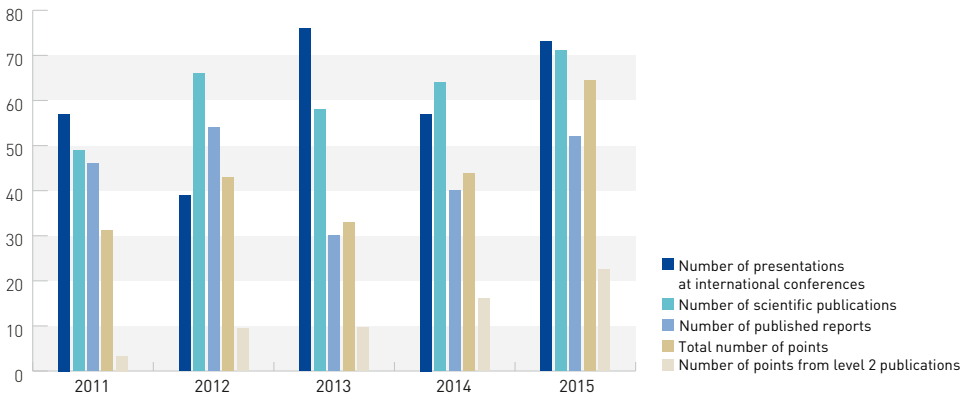


## GOOD PROGRESS IN SCIENTIFIC PUBLICATIONS

For the second consecutive year, the Museum's scientific publishing points increased by roughly 30%. This is due both to an increase in the number of scientific publications, from 64 to 71, and a new calculation model that favours international co-publication.

In total 49% of the Museum's scientific publications were published in collaboration with international colleagues. The proportion of level 2 publications remained the same as in 2014. This demonstrates that the Museum's publications have increased in quantity and are of good quality.

The target that 50% of academic publications should be based on scientific collections or long time series by 2016 was reached in 2015.



	2015 Result	2015 Goal	Goal for the strategy period (end of 2016)
Percentage of scientific publications based on collections and long time series	50 %	50 %	50 %
Percentage of arrangements with international participation	16 %	22 %	20 %
Percentage of exhibitions and events with an interdisciplinary theme	44 %	41 %	50 %
Percentage of digitized cultural heritage collections made available on the web	75 %	82 %	90 %
Percentage of digitized natural history objects made available on the web	61 %	65 %	90 %

Internal resources have been reprioritized to work on joint national databases through the cooperative initiative MUSIT (University Museums' IT organization). For this reason,

the availability of collections on the web barely kept pace with the growth in collections.

## PUBLIC OUTREACH

Developments in recent years show that investing in exhibitions that are attractive to the public and that involve an active marketing campaign generates both increased visits and increased activity for school visits and tours. In 2015, the Museum had nine exhibitions. Activity levels were at about the same level as in 2014.

### EXHIBITIONS AND ARRANGEMENTS 2015

The exhibition *Young researchers meet Mausund (Unge forskere møter Mausund)* was the result of a cooperative project between the research and media classes from Byåsen Upper Secondary School.

Three short-term exhibits were displayed in the Museum's foyer in 2015. The first was *Rimolringen and Tornesgullet*, followed by an exhibition on *Vipers in Bymarka*. An exhibition over the summer and autumn concerned the *Olstad Viking's grave*, which exhibited a fine discovery made using a metal detector.



The NTNU University Museum studies vipers in Bymarka, Trondheim's main public forest. The blue eyes of the viper in the photograph shows that the snake is about to shed its skin.

The Museum's largest new exhibition in 2015 was *Continuous change – from the Ice Age to the Future*, which opened on 15 November. The exhibition was the result of a shared strategic research initiative at Norway's university museums through the Research Council's programme called UNI-MUSEUMS.

Nineteen Sunday events were held over the year, with lectures and activities specifically designed for families. Among the topics were *Viper Sunday*, *Treasure Sunday*, *Viking Weekend*, *Welcomed by the Sea*, *Tracks in the snow*, *Halloween* and *Christmas at the Museum*.

## STABLE VISITOR NUMBERS

The number of visitors in total to the NTNU University Museum remained the same as last year, with approximately 124,000 visitors.

Guided tours for the public at archaeological excavations showed some decline, partly because the excavation at Ørland is being undertaken in a military area, which does not allow public access. Instead, the project staff held standing-room-only talks about their field excavations at the Ørland Cultural Centre.

The number of educational programmes for schools decreased by 10%, but the number of students overall who attended programmes remained stable. Educational programmes in science for 9th graders in the Newton room were also on par with last year's numbers. Over the past decade, school visits numbers have made solid progress, and represent an initiative that will continue.

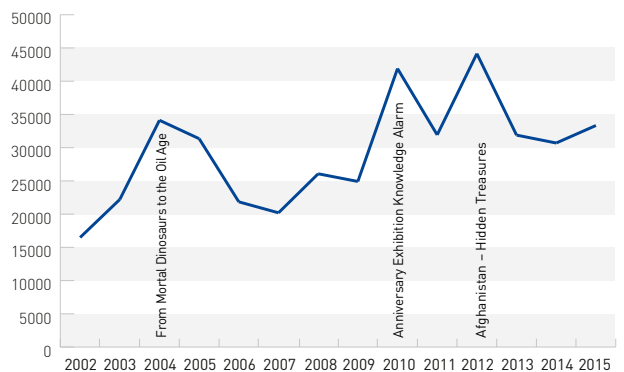


Halloween Night at the NTNU University Museum was a great success.

"Sommerlarm" is a summer school programme for 10- to 12-year-olds that offers many research activities related to the natural environment and cultural history. The summer school lasts for one week and was offered for two subsequent weeks in 2015, with good reviews from both children and parents.

The NTNU University Museum operates two botanical gardens, Ringve Botanical Garden and Kongsvoll Alpine Garden. The gardens are free to the public and visitor numbers are estimated to be around 90,000, approximately the same as in previous years.

## VISITOR NUMBERS 2002-2015, EXHIBITIONS AT KALVSKINNET



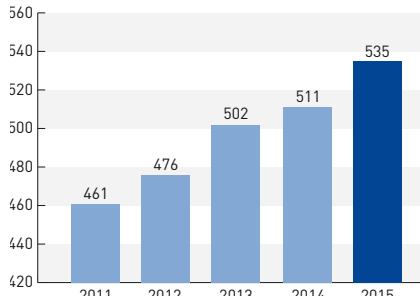
The number of visitors in 2015 was in keeping with the Museum's ambitions for the year. It was clear that 2015 would be a normal year in terms of visitor numbers because there were no major, costly exhibitions.

Stable visitor numbers	2015 Result	2015 Goal	Goal for the strategy period (end of 2016)
Number of exhibitions (permanent / temporary)	4/9	4/11	4/9
Number of museum visitors, including to gardens	123 945	128 000	125 750
Estimated number of visitors to botanical gardens	90 000	92 000	90 000
Number of tours total (including school groups)	518	715	605
Number of educational programmes for school groups	478	535	515

# PUBLIC OUTREACH AND RESEARCH COMMUNICATION

## INCREASE IN PUBLIC OUTREACH IN CRISTIN

The total production rate of content aimed at both the general public and specific target groups registered in CRISTin (Current Research Information System in Norway), was nearly 10% higher than the average for the last five year period. The increase came from archaeological excavation reports that have been published as their own report series over the last two years.



**2015:** Seven people were responsible for 52% of the content produced for the general public, three people were responsible for 33%.

Retired staff who retained a workplace at the Museum were responsible for 10% of all scientific publications.

## COMMUNICATION

### MEDIA COVERAGE

	2011	2012	2013	2014	2015
Media coverage in Norway	867	1064	723	824	690

Source: Retriever



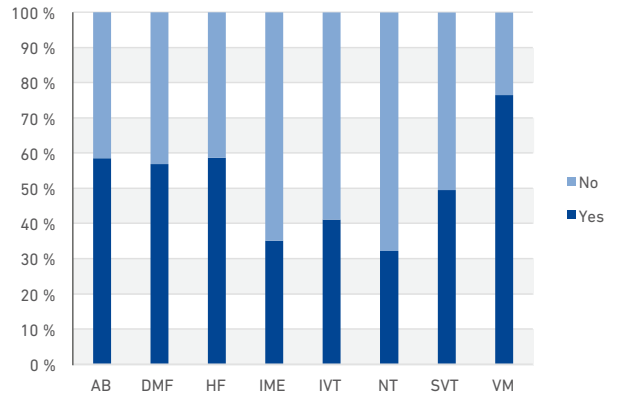
While traditional media coverage in Norway has decreased, the viral spread of news via social media and foreign news services has become more important.

An article about the Museum's archaeological excavation at the Ørland military base was published in English in Gemini, NTNU and SINTEF's online research magazine, at Christmas time.

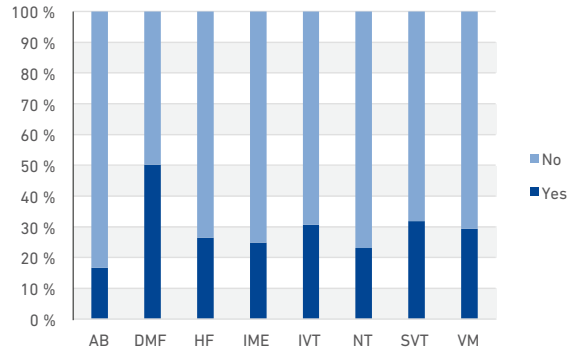
It was also published on the news-sharing site Alpha Galileo. The news spread quickly and within a few days, the excavations at Ørland received media coverage in Venezuela, Serbia, Italy, Uruguay, Australia, Canada, the UK, the Netherlands, the USA, Russia, Armenia, Brazil and Finland, as well as on global websites such as [phys.org](http://phys.org) and [Heritage Daily](http://Heritage Daily).



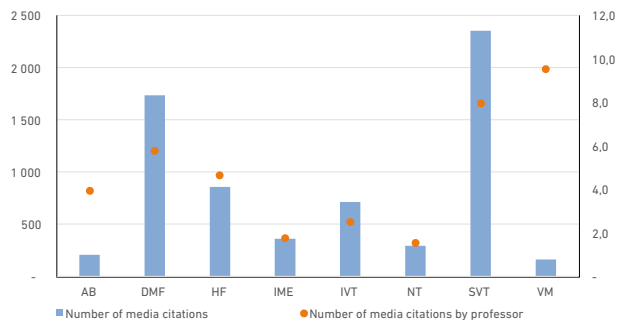
Percentage of professors who were cited in the media by faculty:



Percentage of professors who had publication points in 2014 and were cited in the media



Number of media citations by faculty and by professor



- AB** Faculty of Architecture and Fine Art
- DMF** Faculty of Medicine
- HF** Faculty of Humanities
- IME** Faculty of Information Technology, Mathematics and Electrical Engineering
- IVT** Faculty of Engineering Science and Technology
- NT** Faculty of Natural Sciences and Technology
- SVT** Faculty of Social Sciences and Technology Management
- VM** NTNU University Museum

Articles that cite NTNU's professors ("førstestillinger") over the period. The citation is counted if either NTNU or the position title is named in the same article as the employee's name.

Media citations are compared to publishing data from 2014. The source is Retriever, and employee numbers have been compiled by NTNU's Finances and Property staff.



## DIGITAL AND SOCIAL MEDIA

Visits to webpages in 2015:

<b>63 278</b> ntnu.no/edu	<b>30 181</b> The Museum's blogs	<b>44 959</b> Norark.no
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Visits to Norark.no during the high season, between 1 July and 23 August, were not recorded because of a technical problem. Source: Google analytics

On 2 August 2015 the Museum's website had its **500 000<sup>th</sup>** visitor since we started counting in 2009.

## Results in social media 2015

NTNU Vitenskapsmuseet	NTNU University Museum	Ringve Botanical Garden	Norark
Followers at the beginning of the year <b>6 872</b>	Followers at the beginning of the year <b>1 042</b>	Followers at the beginning of the year <b>2 011</b>	Followers at the beginning of the year <b>3 180</b>
User engagement <b>31 519</b>	User engagement <b>1 561</b>	User engagement <b>15 245</b>	User engagement <b>21 333</b>
Total reach <b>689 924</b>	Total reach <b>24 010</b>	Total reach <b>213 063</b>	Total reach <b>328 486</b>
Total impressions <b>1 296 971</b>	Total impressions <b>27 571</b>	Total impressions <b>437 978</b>	Total impressions <b>627 502</b>

Which means:

<b>4.6</b> engagements per follower for NTNU Vitenskapsmuseet	<b>1.5</b> engagements per follower for NTNU University Museum	<b>7.6</b> engagements per follower for Ringve Botanical Garden	<b>6.7</b> engagements per follower for Norark
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English Facebook pages for the University Museum, were launched on 21 June 2015.



## GREAT INTEREST IN PUBLICATIONS

Digitally published notes and publications continue to be of interest long after they are posted online. The 14 natural history notes posted online in 2014 were downloaded roughly the same number of times in 2015 as in 2014. This trend was even stronger for reports. Natural History reports that were posted in 2014 were downloaded 1256 times that year, and a total of 3107 times by the end of 2015. The 12 archaeological excavation reports that were published in 2014 were downloaded 2266 times in 2014 and 8273 times by the end of 2015.



This trend is expected to continue in 2016, and is partly due to the fact that much of our publishing is done in the autumn, but also because notes retain interest long after they become available.

NTNU University Museum natural history notes posted: <b>10</b> Number of downloads: <b>1 158</b> Most read: <b>Sølandet og Tågdalen</b> with 324 downloads	NTNU University Museum natural history reports posted: <b>7</b> Number of downloads: <b>2 077</b> Most read: <b>Rikmyr i Norge</b> with 614 downloads	Archaeological excavation reports posted: <b>20</b> Number of downloads: <b>2 701</b> Most read: <b>Vestre Rosten</b> with 262 downloads
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Source: Liferay

On 25 January 2016, SPOR had its **100 000<sup>th</sup>** download from the website

**SPOR – News from the past** has two issues per year. Issues that are more than a year old are posted on the Museum's website. Issues from the magazine's beginning in 1990 up to and including 2014 are now available to download for free.

The Museum's scientific staff participates in the teaching and supervision of NTNU students. The NTNU University Museum and the Department of Historical Studies in the Faculty of Humanities collaborate on NTNU's Archaeology study programme. In 2015, the offer was completely restructured.

The programme is now better adapted to students' expectations and dives quickly into the subject's full academic breadth through two large introductory courses. The second academic year highlights close contact with research and cultural history, methodological tools, field studies, a materials course, history of the subject, theory and archaeological practices. Of the autumn's 42 bachelor students, 39 took exams in December. The previous dropout rate of approximately 50% was thus greatly reduced. It is expected that the decline in the number of field days will turn around when more students complete the specialization portion of their bachelor's degree.

The NTNU University Museum has received NOK 300 000 in funding to develop and implement a concept from NTNU's top teaching. The project is included in the overall theme of "Calibrating archaeology studies with reality out in the world" and will prepare graduates to become civic-minded players with broad expertise across all areas of archaeology, research, cultural heritage, public outreach, public heritage management and field surveys.

The Department of Natural History participated actively in the teaching of basic biology courses, with emphasis on field activities. A new course that includes a lecturer from the Museum is "Community ecology and ecosystems." In addition, the Department worked with "Experts in Teamwork" students on a topic related to biodiversity and ecosystem services.

The Research Council of Norway pledged to continue researcher schools in archaeology and biosystematics. The NTNU University Museum's staff are contributors and users of these research schools, which have great importance both in the education of and networking for doctoral candidates.

Eight students completed their degrees with supervisors from the Museum. Three doctoral degrees were completed in 2015, two in archaeology and one in biology. This is a continuation of the strong completion rates in 2014, and is on par with what would be expected.

## EDUCATIONAL ACTIVITIES

	2011	2012	2013	2014	2015
Archaeology: Number of completed master's theses with supervisor from the Museum	3	2	4	3	3
Biology: Number of completed master's theses with supervisor from the Museum	4	3	1	4	5
Archaeology: Number of field course days	1824	1716	1300	1135	1064
Biology: Number of field course days	1220	1207	1072	1015	1061

Several million objects have been recorded and safeguarded as a result of the ten-year project called Revita. The museum has implemented remedial measures to address the lack of satisfactory storage magazines for parts of its collections.

## LARGE INCREASE IN DISCOVERIES MADE BY PRIVATE INDIVIDUALS

The county administration has taken over the first line of intake for private finds. Many finds from 2015 had not been brought to the Museum by the end of the year, but will be received in 2016.

The number of objects received by the NTNU University Museum from the general public has increased nearly tenfold from 2010, from 44 finds that year to 405 finds in 2015. "The record" from 2014 doubled in 2015, in spite of the fact that many finds from 2015 had not yet come to the Museum by the end of the year, but will be received in 2016.

The Sør-Trøndelag County Council undertook two major social searches in Skaun and Austrått, where a large number of enthusiasts scanned a defined area. More than 400 objects were found in Austrått, which will be handed over to the Museum. Twenty-one items were found during the search in Skaun. An additional 220 metal detector finds were filed with the Museum in 2015. This is significantly more than in previous years.

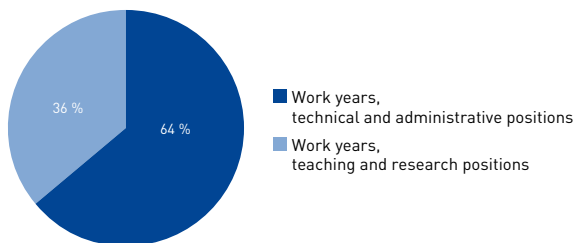
## NEW PROTECTION PLAN COMPLETED

The Museum's conservation and safeguarding plan was finalized in 2015. The biggest challenge for efforts to safeguard and conserve collections is the lack of sufficient and/or satisfactory storage magazines. The plan identifies mitigating measures for safeguarding and conservation of the existing storage magazine for cultural history artefacts, with measures to address the risk of water damage. The number one priority challenge for conservation is to secure sufficient storage capacity with satisfactory climate regulation. Efforts were initiated in the autumn of 2015 to investigate both temporary and permanent solutions to increase storage capacity.

To remedy the lack of storage for cultural history artefacts, a climate-controlled exhibition space in Kalvskinnet was turned over to storage purposes. Archived material that has been digitized is now stored remotely, which makes more storage space available.

In 2015, the NTNU University Museum had 122 staff who provided 114.2 work years. The NTNU University Museum has the highest proportion of technical and administrative work years at NTNU. This is partly due to the Revita project, but also because the Museum has responsibility for building, operating and maintaining the University's scientific collections, botanical gardens, public exhibitions and assignments related to public heritage management. These are responsibilities that require a different organizational structure than at NTNU in general.

## TECHNICAL AND ADMINISTRATIVE WORK YEARS

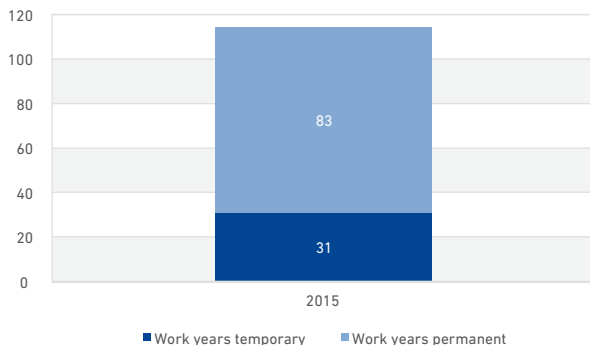


The NTNU University Museum has an important social responsibility and ambitious goals for the future. Employees at the Museum have delivered good results over the years and have helped the Museum to achieve its objectives.

To further improve the NTNU University Museum and to increase our ability to manoeuvre both from a strategic and economic standpoint, the Museum is in the process of completing a strategic human resources plan that provides a link between objectives and strategies, and budget and positions.

The 2014 Work Environment Survey was followed up on in 2015.

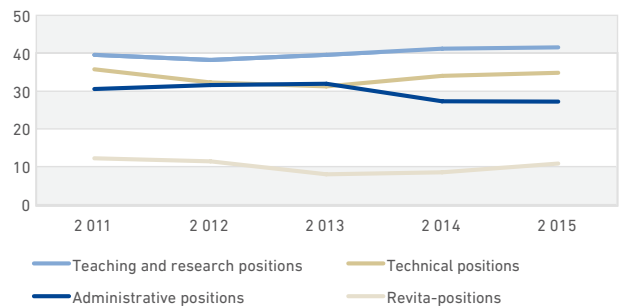
## DISTRIBUTION OF PERMANENT AND TEMPORARY WORK YEARS



Source: DBH 2015, except for externally funded assistance positions

In addition, field work on an hourly basis comprised just over 10 work years in 2015.

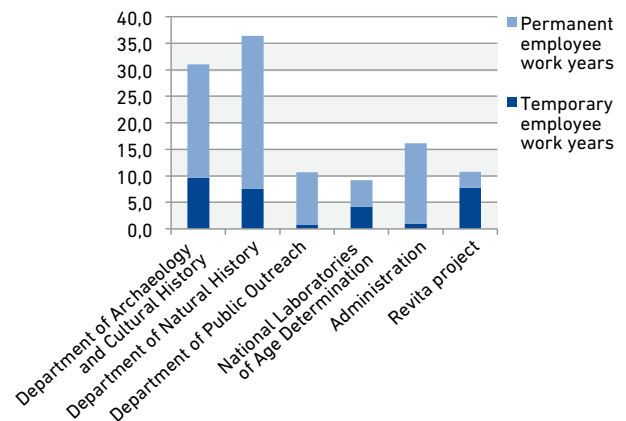
## WORK YEARS BY DEPARTMENT AND ADMINISTRATION OVER THE LAST FIVE YEARS



Source: DBH 2015, except for externally funded assistance positions

The total number of employees decreased by approximately 4 work years between 2011-2015. The Revita project is now being terminated, and during its last year of operation, additional staff were added to help with the completion of the project. The Department of Archaeology and Cultural History and the Department of Natural History have fluctuations in their workforce numbers, partly due to vacant positions and changes in externally financed assignments. The National Laboratories of Age Determination have been strengthened with the addition of two recruitment positions.

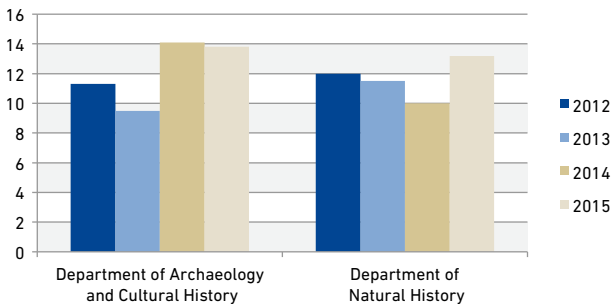
## PERMANENT AND TEMPORARY WORK YEARS 2015 PER DEPARTMENT



Source: DBH 2015, except for externally funded assistance positions

The bulk of the temporary employees in the Department of Archaeology and Cultural History, the Department of Natural History and the National Laboratories of Age Determination are PhD candidates and postdoctoral positions. In addition, there are three fixed-term positions.

## INCREASING PERCENTAGE IN EXTERNALLY FUNDED WORK YEARS IN SCIENTIFIC DEPARTMENTS

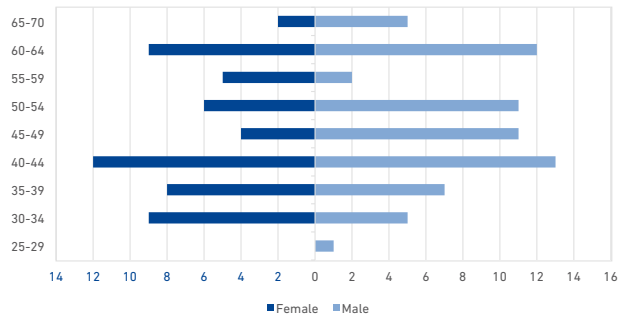


Source: DBH 2015, except for externally funded assistance positions

There has been an increase in the number of externally financed work years for the Museum overall in 2015 (compared to the average for 2012-2014). The bulk of the external work years are part of the appropriation financing but are financed by transfers from externally funded activities. These are relatively permanent work years and are difficult to adjust in keeping with changes in externally funded activities. The increase in the Department of Natural History in 2015 is due to staff funded by the Research Council of Norway. The Museum also has a large number of temporary employees as field leaders and assistants during the field season that are not included in reporting to DBH.

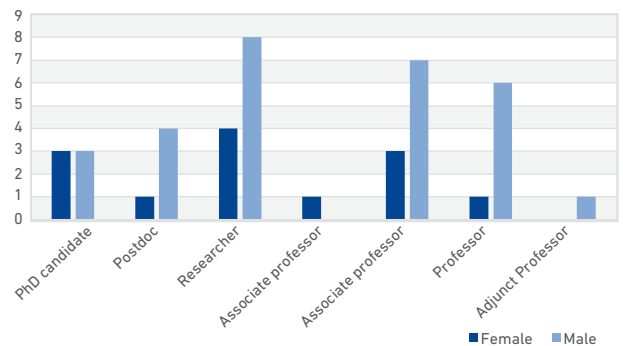
The Revita project's completion plan safeguards knowledge gained from the project, as well as academic and personnel matters.

## EMPLOYEES BY AGE AND GENDER



Source: DBH 2015, except for externally funded assistance positions

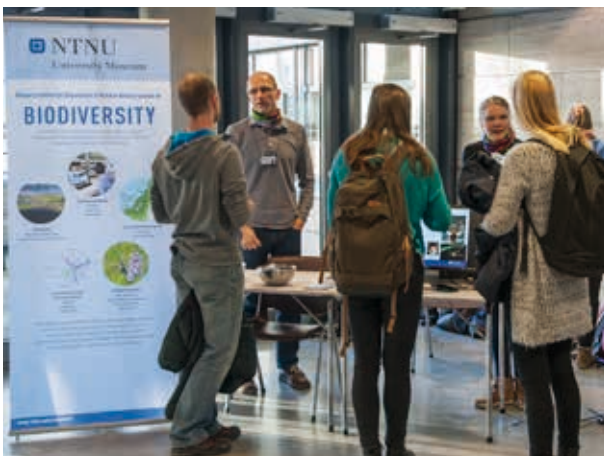
## GENDER DISTRIBUTION ACADEMIC POSITIONS



Source: DBH 2015, except for externally funded assistance positions

The Museum had female staff in 31.7 % of its academic positions in 2015. In 2014 and 2013, the figures were 35.7 % and 24 % respectively.

The average at NTNU was 39.3 % in 2015. Due to the low number of academic positions at the Museum, the appointment or retirement of individuals can have a substantial effect on these percentages.



Employees from the Department of Natural History meet students at a stand.

**31.7 %**  
Proportion of female scientific work years in 2015.



NTNU has established a planning, budgeting and monitoring process with regular reports from faculties and the NTNU University Museum. The process is designed so that the requirements and principles of the government are safeguarded. The NTNU University Museum follows these procedures.

The NTNU University Museum undertakes several internal control and risk management measures, but currently there are variations between functional areas. When control and risk assessment measures are carried out, there is often insufficient documentation of assessments, controls, and follow-up actions that have been taken.

The NTNU Museum wants to work more comprehensively and systematically with internal inspections and risk management. Preventive inspections that enable issues to be discovered will require less resources in the long run than “putting out fires” and troubleshooting afterwards. It is also important to reconcile resource use with the expected impact of inspection measures. Work plans have been introduced for all employees, although the implementation of these plans could be improved.

## REPORTING INTERNAL INSPECTIONS FOR NTNU 2015



2015 was the first year that the reporting of internal inspections was completed, so there are no figures from earlier years to make comparisons.

### Research including externally funded activities (BOA)

Established practices and procedures have been followed for the most part. Regular accounting and monitoring of hours are regularly conducted for externally funded projects. A separate accounting and budget template for public heritage management projects is different from general accounting procedures. This poses challenges for both monitoring and comprehension. It is therefore difficult to get good estimates of the externally funded activities portfolio both in the current year and from a long-term budget perspective. CRISTin records are monitored closely.

### HSE

The NTNU University Museum has consistently good HSE practices. Documentation and discrepancy reporting could be improved, however, and risk assessments could be better for activities such as field work, for example.

### IT

The NTNU University Museum has consistently good practices when it comes to IT. A Risk and Vulnerability Analysis (RVA) was conducted in 2014. The analysis included the Museum’s information assets, such as collections, archives, electronic data and the like. The RVA has been actively followed up on. The management of updating and IT security of the computer system is centralized.

### HR

Internal inspections are largely built into work processes. There is a need to be more systematic with inspections. Inspections are conducted as needed, to a great extent than just at scheduled times. Not everything has been documented. Work is being undertaken with procedures to speed up and reduce the risks related to employment matters.

### Finances

Most areas have job descriptions, procedures and process descriptions. Not all procedures are fully followed by everyone. The monthly monitoring of accounts and budgets for the Departments and NTNU is done centrally. This has contributed to increasing awareness of the financial situation among managers and has helped to raise the quality of budgets and forecasts. A number of internal inspections and risk assessments are conducted that are nevertheless not documented afterwards.

### Scientific collections

An RVA analysis from 2014 has been followed up on with measures to mitigate identified risks. Some risks cannot be addressed until the Museum gets a new storage magazine. The greatest challenges for safeguarding and conservation work of the scientific collections, from both a short- and long-term perspective, are the lack of satisfactory storage for parts of collections, and sufficient storage capacity. A security plan was completed in 2015, and an evacuation plan is being prepared. Formalized procedures for the lending and borrowing of artefacts is in place, but these lack comprehensive systematic internal control.

### Public operations

A risk assessment related to exhibits and an evaluation of exhibits is being conducted. There is an acceptable overview of the progress in the production of exhibitions. A evaluation of the academic benefit is lacking, and there is poor control regarding the use of resources.

# V. ASSESSMENT OF FUTURE PROSPECTS

## ATTRACTIVENESS TO THE PUBLIC

A significant challenge for Norwegian university museums is that the regulatory framework to ensure the financing of new and contemporary exhibitions is not satisfactory. There are very limited opportunities for public support, and the portfolio of funds and endowments in Norway is small. The NTNU University Museum is housed in older buildings that are not suitable for the development of modern, attractive exhibitions and events. This has a negative affect on the Museum's ability to fulfil its societal obligations related to public outreach and the University's area of operations.

The NTNU University Museum will address these challenges in four ways:

- We will seek professional and operational cooperation with local institutions that have public outreach as their social responsibility, and we will strengthen cooperation with Norway's other university museums.
- We will involve NTNU faculties academically and financially in developing exhibits or will attract exhibitions that have a clear academic relevance for the respective faculties.
- We will establish exhibitions and events at venues outside of the Museum when this is necessary for structural reasons.
- We will work to establish an understanding in the University leadership and the Ministry that the Museum needs more appropriate exhibition and storage spaces.



**GLASS TUBES FILLED WITH HEAVY WATER.** The NTNU University Museum wants to play a role in working with the University's historical collections.

**THE OLSTAD VIKING'S GRAVE** On Mannsfjellet in Skaun, overlooking Trondheimsfjord, bereaved relatives ensured that one man was buried in a grave as was the custom around the year 950 AD. An exhibition of the finds was opened 9 June in the Museum's foyer. The grave was excavated in the autumn of 2014.

## SUSTAINABLE ECONOMY— PRIORITIZING INVESTMENTS

Like others in the higher education sector, the NTNU University Museum has to address the need to implement efficiency requirements for technical and administrative tasks. Our social responsibility is related to safeguarding and conserving natural and cultural history collections, welcoming the public, and operating the Museum, botanical gardens and other outdoor locations. These tasks require a technical and administrative staff of considerable size. Potential efficiencies may be mainly found in better administrative routines and digital systems.

In addition to requirements to streamline operations, the Museum's finances are affected by the award of external contracts. Within archaeology, these assignments are largely affected by cycles. In addition, the Museum's statutory administrative tasks related to archaeology do not necessarily have a budgetary payoff.

## INCREASED INTERNATIONALIZATION

The international research community is increasingly and significantly interested in in university museum collections and long time series data. This is related to at least three factors: (i) digitization / web accessibility and increased international publishing by Museum employees, which have given the collections increased visibility, (ii) the development of various types of methodologies and analytical tools that provide increased knowledge about artefacts, and (iii) the invaluable nature of the Museum's long time series in both hypothesis testing and work that involves synthesizing ideas in the fields of both natural and cultural history. This will allow for more international cooperation for the Museum's research groups, and will increase opportunities for external financing of a larger number of projects.

Better visibility for our collections will increase opportunities for participation in international forums. In addition, increased participation in international arenas will allow us to make the University's research groups more visible. While we will increase our ability to attract relevant, high-quality international exhibits with audience appeal, we must also increase our ability to attract international support for developing our own exhibitions.



## DIRECTOR'S COMMENTARY

The annual financial statement has been prepared in accordance with government accounting standards. In the opinion of the Museum Director, the annual statement provides a correct picture of the 2015 results and the financial situation as of 31.12.2015.

The annual financial statement for the NTNU University Museum consists only of an income statement. Each year, a complete collective financial statement is prepared for NTNU, including an income statement, balance sheet, notes and cash flow statement. There is no separate balance sheet prepared at the unit level at NTNU, which means that there is no separate balance sheet for the NTNU University Museum.

Further information on NTNU's income statement and balance sheet can be found at:

<http://bit.ly/NTNU2015>



The income statement for the NTNU University Museum consists of grant-financed activities and externally funded activities. The NTNU University Museum's income statement for 2015 shows a loss of NOK 3.098 million. The loss can be divided into NOK 2.005 million from the allocation from the Strategy and Restructuring Funds (RSO) from NTNU, and NOK 1.093 million from the Museum's own annual operating budget.

The deficit in the RSO funds reflects the deliberate and planned shutdown of remittances related to Revita project, which was concluded at the end of 2015. The deficit from the Museum's annual operating accounts is mainly due to lower reimbursements from externally funded activities. The reason for this is that there was less income than foreseen during the preparation of the budget.

Transfers in appropriation accounts are accumulated as accounting profits. The remittances play an important function for ensuring stability in years with low externally funded turnover, as reserve capital in case of problems with critical infrastructure and to cover possible future accounting deficits. The need for reserves and security must be seen against the need to activate these transfers to increase the Museum's strategic ability to manoeuvre, enhance the Museum's primary responsibilities and enhance its competitiveness in order to increase externally funded activities (BOA) to an even higher level.

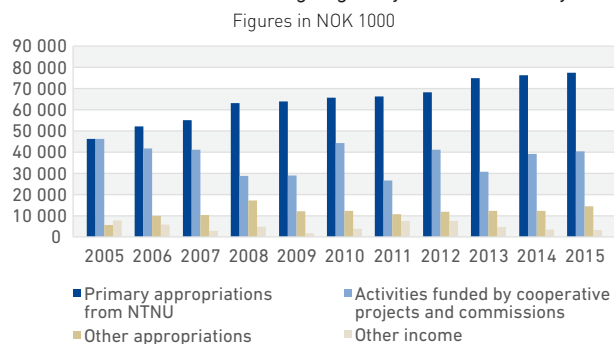
Transfers to the appropriation accounts in 2015 were roughly 15% of the annual operating appropriation exclusive of internal rental expenses. The Museum Board has decided that the Museum's transfers should be in the range of 8 to 12%. Over the long-term period of 2017-2019, the goal is to downsize allocations to the approved level.

The NTNU University Museum has increased its applications to the Research Council of Norway and the EU. Targeted efforts

to achieve positive recognition in international research arenas and increase attractiveness to the general public will further strengthen the Museum's strategic and financial position.

## TOTAL INCOME DISTRIBUTION

Sources of income have changed greatly over the last 10 years



The terms governing how revenues are accounted for have changed during the period, so that figures are not directly comparable from year to year. The total income distribution still shows a trend where income from activities financed by commissions and collaborations has not evolved at the same pace as the normal operating appropriation from NTNU.

The annual appropriation fund, excluding funding for internal rental expenses, has grown at a stable rate during the period, and has mainly developed in keeping with the allocation NTNU receives from the Ministry. The 2015 annual report for NTNU states that real growth in appropriations is not expected up to 2019.

Other grants come mainly from the Strategy and Restructuring Funds (RSO) and relate to awards to the Revita project and recruitment positions and (partial) financing of major equipment. Variations are due in large part to additional awards for security measures and grants for major pieces of equipment.

In 2005, our collaborative and commission income was almost as large as our regular operating appropriation from NTNU, but beginning in 2008 there were major fluctuations from year to year. Note that the current strategy period began in 2011. In addition, collaborative and commission revenue has been falling on average when salaries and price inflation is taken into account. This is not a desirable development for the Museum's externally funded income. NTNU's 2015 annual report states that in order to maintain the scope and quality of its research, NTNU is dependent on stable and preferably rising revenue from collaborations and contract-funded activities. Successful applications to the Research Council of Norway and various EU-funding agencies are of significant importance for research.

Reidar Andersen, Museum Director

# VI. ANNUAL ACCOUNTS

## INCOME STATEMENT

Results, figures in NOK 1000	2011	2012	2013	2014	2015
<b>Income distribution:</b>					
NTNU appropriation (note 1)	76 600	80 225	87 399	88 523	91 899
External funding* (note 2)	26 551	41 052	30 677	39 129	40 362
Other income (note 3)	7 501	7 082	4 668	3 540	3 339
<b>Total Income</b>	<b>110 652</b>	<b>128 359</b>	<b>122 744</b>	<b>131 192</b>	<b>135 600</b>
<b>Cost allocations:</b>					
Investments (note 4)	1 880	2 557	3 093	1 503	5 143
Payroll and social security costs (note 5)	71 276	77 389	80 522	81 434	89 038
Other operating expenses (note 6)	21 935	32 742	28 200	25 089	24 081
Changes in business capital (note 7)	-15	-556	-1 608	99	35
Internal rental expenses (note 8)	15 551	16 385	19 478	19 482	20 133
Internal items (note 9)	-812	1 204	178	937	268
<b>Total expenditures</b>	<b>109 815</b>	<b>129 721</b>	<b>129 863</b>	<b>128 544</b>	<b>138 698</b>
<b>Result for the year</b>	<b>837</b>	<b>-1 362</b>	<b>-7 119</b>	<b>2 648</b>	<b>-3 098</b>

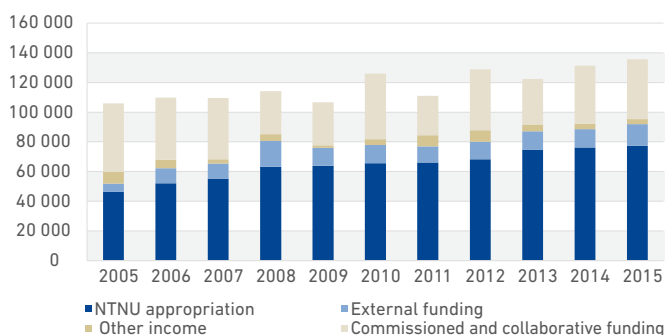
\* exclusive of pass-through funds

### NTNU APPROPRIATION (NOTE 1)

Appropriation funded activities comprise three separate accounts: 1) management accounts which are funded by grants from NTNU and ticket sales and sales from the Museum shop, etc. Other revenues and reimbursements come from externally financed activities. Museum revenues from ticket sales for exhibitions and sales from the Museum shop are important in co-financing activities in the Department of Public Outreach. 2) The Strategy and Restructuring Funds (RSO), which relate to allocations to the Revita project and recruitment positions and (partial) financing of major items of equipment. 3) Common Funds (RF) pay for NTNU's share and part of the Museum's costs related to the university museums' common IT organization (MUSIT).

The Museum's appropriation revenues are relatively stable from year to year, and are adjusted mainly to reflect salaries and price inflation. Individual grants for scientific equipment, job recruitment or security measures may result in some variations.

Income distribution





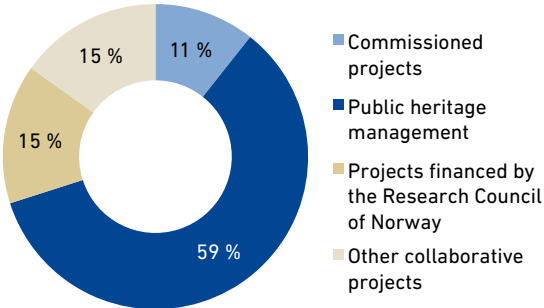


**HALLOWEEN** Many people came to the NTNU University Museum on Halloween night.

**EXTERNAL FUNDING (NOTE 2)**

Revenues from external funding include sales of services or activities that are not fully financed by NTNU’s primary appropriations from the Ministry of Education and Research or by funds from the Directorate for Cultural Heritage. Externally funded activities are defined as activities funded through commissions or collaborations (BOA). Commissioned projects are fully financed by the client. Collaborative projects are initiated by the NTNU University Museum and granted financial support from agencies such as the Research Council of Norway and the EU. These projects often require partial self-funding of project expenditures.

The figure below shows how revenues from external funding (BOA) were distributed in 2015.



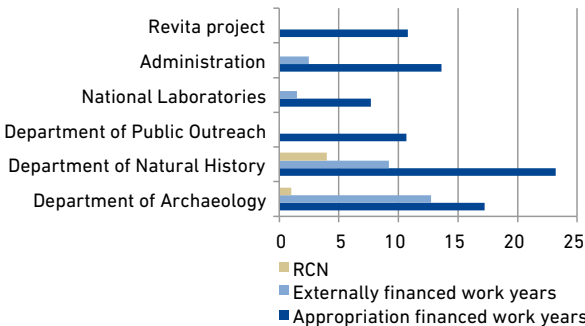
Archaeological investigations conducted under the Cultural Heritage Act are financed by the landowner or by the Directorate for Cultural Heritage according to guidelines, and are classified as public heritage management.

Collaborative project income is presented without indirect donations, income that the NTNU University Museum receives from collaborator(s) to cover a collaborative partner’s share of a project. In 2015, indirect donations amounted to NOK 6.8 million.

External revenues vary widely from year to year. The reason is strong competition for both commissioned and collaborative projects and because income from public heritage management is cyclical. The NTNU University Museum has little opportunity to influence the scope of public heritage management activities.

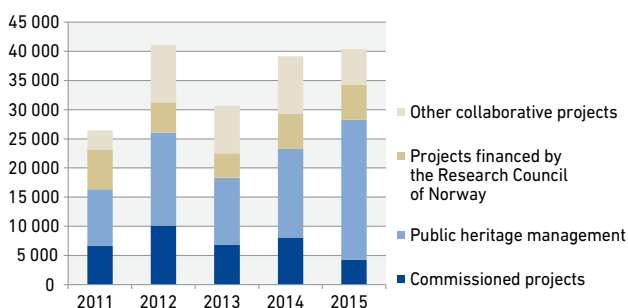
The main financial challenge for the NTNU University Museum in the coming years will be to realize a predictable, stable and growing turnover for externally funded activities.

Collaborative projects funded by the Research Council of Norway saw a decline in previous years, but have increased since 2014 after a conscious commitment to increase applications. The turnover in 2015 was at the same level as in 2014.



## VI. ANNUAL ACCOUNTS

### TURNOVER BY CATEGORY FOR EXTERNALLY FINANCED ACTIVITIES 2011-2015



Not including indirect donations

There have been no research activities funded by the EU from 2011-2015.

### OTHER EXTERNAL AND INTERNAL REVENUE (NOTE 3)

Ticket revenues from public exhibitions and sales from the Museum Shop and individual reimbursements are recorded under other revenue.

The reduction in other income in recent years is due in large part to the fact that grants from the Directorate for Cultural Heritage for some services that are carried out as public heritage management have been reclassified as externally funded activities.



School children in Ringve Botanical Garden.

### INVESTMENTS (NOTE 4)

Investments are recorded as costs in the income statement for each year. There is a central fixed asset register of all investments at NTNU. Capitalized assets and depreciations are only recorded in NTNU's consolidated financial statements.

Over the course of 2015 there were investments in geophysical equipment of about NOK 1.7 million, upgrades of storage magazines of approximately NOK 0.49 million, computer equipment for roughly NOK 0.845 million and GPS equipment for approximately NOK 0.47 million.

### PAYROLL AND SOCIAL SECURITY COSTS (NOTE 5)

The largest expenses in the financial statement are payroll and social security costs of NOK 89.038 million. This represents roughly 64 % of total expenses.

Figures in thousand NOK	2014	2015
Salaries	58 776	62 521
Holiday pay	7 288	7 785
Employer's tax	10 121	11 040
Pension contributions	8 183	8 410
Sick leave and other reimbursements	-3 347	-1 578
Honoraria for contractors or for the board and committees	134	324
Other benefits	279	537
<b>Total payroll costs</b>	<b>81 433</b>	<b>89 038</b>
Number of work years	111.0	114.2

The NTNU University Museum had 114.2 work years in 2015 compared to 111.0 work years in 2014, as reported to the Database of Higher Education (DBH). This increase was mainly due to the strengthening of the Revita project by more than two work years in its last year of operation and a temporary vacant position that was filled during 2015.

Only those who receive a monthly salary at the time of the reporting date for the DBH are recorded as work years. The NTNU University Museum has a large field season during the summer with many temporary field workers. These workers are mostly not included in the reporting to DBH, which is also the case for extra help hired for the summer, for the Ringve Botanical Garden or with the scientific collections, for example. The temporary staff that were hired for externally funded field activities in 2015 are estimated to represent just over 10 full work years.

The salaries of the Museum Director and honoraria for the Museum Board including social security costs in 2015 were NOK 1.343 million and NOK 0.058 million, respectively.

## OTHER OPERATING EXPENSES (NOTE 6)

Other operating expenses totalling NOK 24.081 million related to operational and travel costs financed from the operational budget or external projects. Costs associated with external projects that were invoiced to collaborators or clients of commissioned external projects totalled NOK 10.9 million in 2015.

Figures in thousand NOK	2014	2015
Equipment leases	2 074	2 151
Equipment purchases	4 997	4 979
Purchase of services	10 622	8 884
Business travel expenses	4 955	4 333
Other operation costs	2 441	3 734
<b>Total operating costs</b>	<b>25 089</b>	<b>24 081</b>

## CHANGE IN BUSINESS CAPITAL (NOTE 7)

The change in business capital consists primarily of the net results from projects that were completed in 2015. Business capital decreased by NOK 0.035 million in 2015, and as of 31 December 2015 was NOK 2.380 million.

## INTERNAL RENT PAID (NOTE 8)

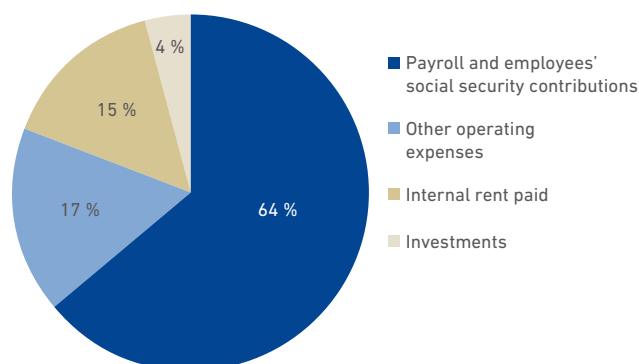
The charged internal rents in the income statement for 2015 amounted to NOK 20.133 million. The rent appropriation, which is part of the total appropriation from NTNU, is NOK 19.111 million. The difference of NOK 1.022 million must be financed by the Museum's operating appropriation and revenue from externally financed activities.

## INTERNAL ITEMS (NOTE 9)

Internal items consist mainly of: A) The sales of services and reimbursements between the income statement and the externally funded enterprise, own share and self-financing

of collaborative projects and the completion of contribution projects. These expenditures are omitted in the year-end results. B) Sales of goods and services internally and other internal items between the NTNU University Museum and other units at NTNU.

## DISTRIBUTION OF COSTS IN 2015



79% of the NTNU University Museum's revenue is tied up in salaries, social security costs and rent. These are costs that are difficult to adjust in line with any negative fluctuations in earnings over the short term.

## PUBLIC HERITAGE MANAGEMENT

In addition to ordinary university activities, the NTNU University Museum undertakes public heritage management and archaeological digs in accordance with the Cultural Heritage Act. The museum completed 40 projects and had a turnover of NOK 23.9 million for these types of surveys in 2015. There is no direct relationship between revenue and number of surveys, since there is great variation in the sizes of the individual projects. The Museum is dependent on having the manpower capacity for projects when they come.

Lise Mariann Alsli is part of the School Service at the Museum. They received 10 511 students and kindergarten children in 2015.





Project coordinator: Tone Eivindsen. Assistance: Hermenes AS.

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 **NTNU**  
University Museum

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