



Statistics for use in the evaluation of natural sciences in Norway

Analysis of research personnel in 2013, 2017 and 2021

TALL

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Preface

This report presents statistics and indicators for research and development (R&D) personnel at the department/institute level for the units in the Norwegian higher education and the institute sectors which are included in the ongoing evaluation of natural sciences in Norway conducted by the Research Council of Norway. Conducting evaluations of Norwegian research is a key task of the Research Council of Norway. Evaluations are reviews of how research fields, scientific disciplines and academic institutions are performing in the national and international context. R&D statistics have been part of the knowledge base in previous evaluations and will contribute with data also in the new round of evaluations started in 2022/2023 and over the next few years they will cover biosciences, natural sciences, mathematics, technology, and medical and health science. This report follows the same outline as the report "Statistics for use in the evaluation of biosciences in Norway", Report 2023/12.

The main purpose of this report is to provide statistics and indicators on R&D personnel within natural sciences. The R&D personnel statistics are based on individual data from the Register of Research Personnel at Statistics Norway. The report was commissioned by the Research Council of Norway and is produced in collaboration with the Nordic institute of innovation, research and education (NIFU), by senior advisor Kristoffer Rørstad and head of group/senior advisor Kaja Wendt at Statistics Norway. Statistics Norway is responsible for data on R&D personnel for the evaluated units, while NIFU conducts bibliometric studies.

Statistics Norway, 11 April 2023

Per Morten Holt

Abstract

The statistics and indicators presented in this report provide background data for the evaluation of natural sciences conducted by The Research Council of Norway. Data are compiled by Statistics Norway and include data for 18 higher education units and 12 units belonging to the institute sector for the years 2013, 2017 and 2021.

3,263 people involved in natural science in the evaluation units

In 2021, R&D personnel in the natural science units of this evaluation amounted to 3,263 people: 1,652 in the higher education institutes and 1,611 in the institute sector. There has been a growth in the number of R&D personnel from 2,626 in 2013. For the higher education sector, the growth was about 31 per cent, while the growth for the institute sector amounted to 18 per cent. The growth for the higher education sector was stronger from 2013 to 2017, than from 2017 to 2021. For the institute sector the growth was in the last period (2017–2021).

Young researchers and stable overall age structure

Among R&D personnel included in the evaluation, the age structure has been rather stable from 2013 to 2021. In the higher education sector, the average age among personnel in the evaluated units was 38 years for all years. This is younger than for the higher education sector in total, where the staff on average were 43 years in 2021. The professors were on average 55 years, associate professors 45 years, researchers/postdocs 36 years and PhD-students 29 years. The corresponding figures in the higher education sector were 56 years for professors, 48 years for associated professors, 41 years among researchers/postdocs and 33 years for PhD-students. In the institute sector the average age was 43.3 years in 2013 and 44.2 years in 2021.

The share of R&D personnel at 62 years and older at the professor level, rose from 26 per cent in 2013 to 28 per cent in 2021 in the higher education sector units, and only 5 per cent of the associate professor were 62 years or older in 2021. In the institute sector units, the overall share of R&D personnel at 62 years and older remained stable at 7 per cent from 2013 to 2021.

Still skewed gender balance at the professor level

Overall gender balance has improved slightly from 2013 to 2021 among units in the evaluation: In the higher education sector 33 per cent of the R&D personnel are women (30 per cent in 2013). At the professor level there is still a skewed gender balance with only 21 per cent women (17 per cent in 2013). This is the same share as for the total of natural sciences. In the institute sector, there are 39 per cent women, which represents an increase from 34 per cent in 2013.

A high share of foreign doctoral degree holders

Among the R&D personnel (among professors, associate professors, and researchers/postdocs) 46 per cent of the evaluated units had a foreign PhD-degree in the higher education sector, while 33 per cent had a foreign PhD-degree in the institute sector. Among the professors, 40 per cent had a foreign PhD-degree and among associate professors the share was 37 per cent. Among researchers/postdocs, the share has been over 50 per cent for all the years in the period; 54 per cent in 2021.

In comparison, in the higher education sector total (among professors, associate professors and researchers/postdocs), the share of foreign PhD-degrees was 28 per cent, and within natural sciences in the higher education sector, this share was 45 per cent. In the institute sector, 27 per cent of the researchers had a foreign PhD-degree in 2021.

Sammendrag

Statistikken og indikatorene som presenteres i denne rapporten bidrar med bakgrunnsdata for evalueringen av naturvitenskap som gjennomføres av Norges forskningsråd. Statistikken er utarbeidet av Statistisk sentralbyrå og omfatter data for 18 enheter i universitets- og høyskolesektoren og 12 enheter i instituttsektoren for årene 2013, 2017 og 2021.

3 263 forskere/faglige arbeidet med FoU innenfor naturvitenskap i evalueringseenhetene

I 2021 utgjorde FoU-personalet i de naturvitenskapelige enhetene i denne evalueringen 3 263 personer. 1 652 var i universitets- og høyskolesektoren og 1 611 i instituttsektoren. Siden 2013 har antallet vokst med 637 personer. I universitets- og høyskolesektoren var veksten om lag 31 prosent, mens veksten i instituttsektoren utgjorde 18 prosent. Veksten for universitets- og høyskolesektoren var sterkere før 2017, enn etter. For instituttsektoren foregikk veksten i siste periode (2017–2021).

Unge forskere og stabil aldersstruktur

Blant FoU-personalet som inngår i evalueringen, har aldersstrukturen vært stabil. I universitets- og høyskolesektoren var gjennomsnittsalderen blant personalet i de evaluerte enhetene 38 år i hele perioden. Dette er fem år yngre enn for sektoren totalt i 2021. Professorene var i gjennomsnitt 55 år, førsteamanuensis 45 år, forskere/postdoktorer 36 år og stipendiatene 29 år. Tilsvarende tall for totalt i universitets- og høyskolesektoren var 56 år for professorer, 48 år for førsteamanuenser, 41 år blant forskere/postdoktorer og 33 år for stipendiater. I instituttsektoren var gjennomsnittsalderen 43,3 år i 2013 og 44,2 år i 2021.

Andelen av professorene som var 62 år og eldre steg fra 26 prosent i 2013 til 28 prosent i 2021 for enhetene i universitets- og høyskolesektoren. Blant førsteamanuensene var kun 5 prosent 62 år og eldre. I instituttsektoren utgjorde forskere som var 62 år og eldre, 7 prosent for alle de tre årene 2013, 2017 og 2021.

Fortsatt skjev kjønnsbalanse på professornivå

Den samlede kjønnsbalansen har forbedret seg fra 2013 til 2021 blant FoU-personalet ved enhetene i evalueringen: I universitets og høyskolesektoren var 33 prosent av FoU-personalet kvinner (30 prosent i 2013). På professornivå er det fortsatt skjev kjønnsbalanse med kun 21 prosent kvinner i 2021 (17 prosent i 2013). Dette er for øvrig samme andel som totalt for fagområdet matematikk og naturvitenskap. I instituttsektoren var 39 prosent kvinner, dette var en økning fra 34 prosent i 2013 og i 2017.

Høy andel med utenlandsk doktorgrad

Blant FoU-personalet (uten stipendiatene) ved evalueringseenhetene i universitets- og høyskolesektoren hadde 46 prosent utenlandsk doktorgrad. Blant professorene hadde 40 prosent utenlandsk doktorgrad og blant førsteamanuensene var andelen 37 prosent. Blant forskere og postdoktorer har andelen vært over 50 prosent for alle årene i perioden; 54 prosent i 2021. Blant forskerne i instituttsektoren, ved evalueringseenhetene, hadde 33 prosent utenlandsk doktorgrad.

Til sammenligning, i hele universitets- og høyskolesektoren (blant professorer, førsteamanuenser og forskere/postdoktorer) utgjorde andelen med utenlandsk doktorgrad 28 prosent, mens tilsvarende andel blant FoU-personalet for fagområdet matematikk og naturvitenskap var 45 prosent. I hele instituttsektoren totalt, hadde 27 prosent av forskerne en utenlandsk doktorgrad i 2021.

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1. Introduction

This report presents statistics and indicators for research and development (R&D) personnel at the department/institute level in the higher education and institute sectors for the units included in the ongoing evaluation of natural sciences in Norway conducted by the Research Council of Norway (abbreviated RCN). Conducting evaluations of Norwegian research is a key task of the Research Council of Norway. Evaluations are reviews of how research fields, scientific disciplines and academic institutions are performing in the national and international context. R&D statistics have been part of the knowledge base in previous evaluations and will contribute with data also in the new round of evaluations started in 2022/2023 and over the next few years they will cover biosciences, natural sciences, mathematics, technology, and medical and health science. The main aim of the evaluation is to assess the quality of Norwegian natural sciences research, assess the framework conditions for the research and the research's relevance to key areas of society. The evaluation will result in recommendations to the institutions, the RCN and the ministries.¹ This report follows the same outline as the similar report "Statistics for use in the evaluation of biosciences in Norway", Report 2023/12.

The main purpose of the report is to provide statistics and indicators on R&D personnel within natural sciences. The R&D personnel statistics are based on individual data from the Register of Research Personnel at Statistics Norway.

The report includes an overview of R&D expenditures, by field of R&D in the higher education sector over the last 20 years. Finally, we present an overview of the Norwegian research and innovation system.

First, we present personnel statistics for the evaluation units in higher education sector. Then, the units are presented separately. In the higher education sector, a total of 18 units are included in the evaluation, while 12 units are included in the institute sector. The purpose of the overall figures and tables is to give an overview of the research population of all evaluation units in higher education for all indicators chosen for this evaluation. With these figures, the units can be compared with each other and with the average of all units as benchmark figures.

1.1. The Norwegian research and innovation system

The Norwegian research and innovation system includes many institutions with different roles. It is common to distinguish between three levels: the performing, the strategic and the political level. Extensive internationalisation also applies to Norwegian research and is increasingly important for all parts of the Norwegian R&D system.²

The performing level

At the performing level in Norway, there is the higher education sector (including university hospitals), the institute sector and the industrial sector. The higher education sector performed about one-third of Norwegian R&D activity in 2021. There is a broad variety of institutions in the higher education sector, including universities, state university colleges and private higher education institutions. At the same time, research activity is concentrated, as universities, including university hospitals, accounted for more than 87 per cent of the higher education sector's total R&D expenditure in 2021. Compared with other countries, a relatively high share of Norwegian R&D is performed by research institutes (20 per cent). The Norwegian institute sector is rather heterogeneous in terms of institute size, profile, and legal status. The sector includes both public

¹ For more information: <https://www.forskningsradet.no/tall-analyse/evalueringer/fag-tema/biovitenskap/>

² The presentation of this part is based on (The Research Council of Norway (2021): Science and Technology Indicators for Norway 2021.

sector-oriented and industry-oriented institutes, of which the latter group plays an important role in carrying out contract research for Norwegian and foreign companies. Even though the industrial sector accounts for nearly half the R&D expenditure in Norway, the proportion of research performed in this sector is low compared with other countries.³ Given the resource-based structure of the economy, there are relatively few large R&D-intensive companies in Norway.

The strategic level

At the strategic level, several agencies are important for Norwegian STI policy. The two most important players are the Research Council of Norway (RCN), which focuses on research and technological funding, and Innovation Norway, which focuses on innovation. More than half of the budgetary funding for Norwegian R&D activity goes through the Ministry of Education and Research and the RCN. The RCN has more than 25 per cent of public R&D funding and receives funding from all 15 ministries. Innovation Norway encourages innovation at the regional and national level, with a focus on small and medium-sized enterprises. SkatteFUNN, R&D tax incentive scheme, is organised under RCN and has become a major tool for encouraging innovation by supplying tax credits for the R&D activity. In addition to RCN, Innovation Norway and SkatteFUNN, there are several other key players. SIVA encourages the development of science parks, incubators, and services for start-up firms. GIEK supplies long-term guarantees that encourage the Norwegian industry to take part in more international trade and export. Enova, owned by the Ministry of Climate and Environment, encourages environmentally friendly production and consumption of energy and exploration of new sources of clean energy. Digdir (Norwegian Digitalisation Agency) aims to be the government's foremost tool for faster and more coordinated digitization of society. Finally, the Norwegian Defence Research Establishment (FFI) aims to advance knowledge in artificial intelligence, additive manufacturing, quantum computing, nanotechnology, the Internet of things, and autonomy.

The political level

The Norwegian research and innovation system can be characterised by considerable pluralism at the political level. According to the "sector principle", all 15 ministries (after the 2021 election) are responsible for financing both short-term and long-term research within their respective sectors. Hence, public research funding and science policy involves extensive coordination. At the same time R&D funds are concentrated, as five ministries account for 85 per cent of total public R&D funding, based on government budget allocations. The most important one is the Ministry of Education and Research. This ministry also prepares the long-term plan for research and higher education and is responsible for coordinating research policy across ministries at the national level. Other important contributors are the Ministries of Trade, Industry and Fisheries, Health Care Services, Climate and Environment, Local Government and Modernisation and Defence. The Research Council of Norway (RCN) also supplies advice to the government on STI policy and network governance between various actors in the STI system.

The S&T statistical infrastructure

The production of STI statistics has historically been distributed across different parts of Norway's statistical system. The official statistical agency, Statistics Norway, is a key pillar. Since 2022 the agency produces R&D and innovation statistics for all sectors, conducts evaluations and research and provides a macro and micro-data warehouse. R&D statistics for the government and higher education sector were produced by the Nordic institute of innovation, research and education (NIFU) since the 1960s. In 2022 this responsibility was transferred to Statistics Norway. NIFU's staff who produced the statistics also moved to Statistics Norway. In this way the quality of the statistics

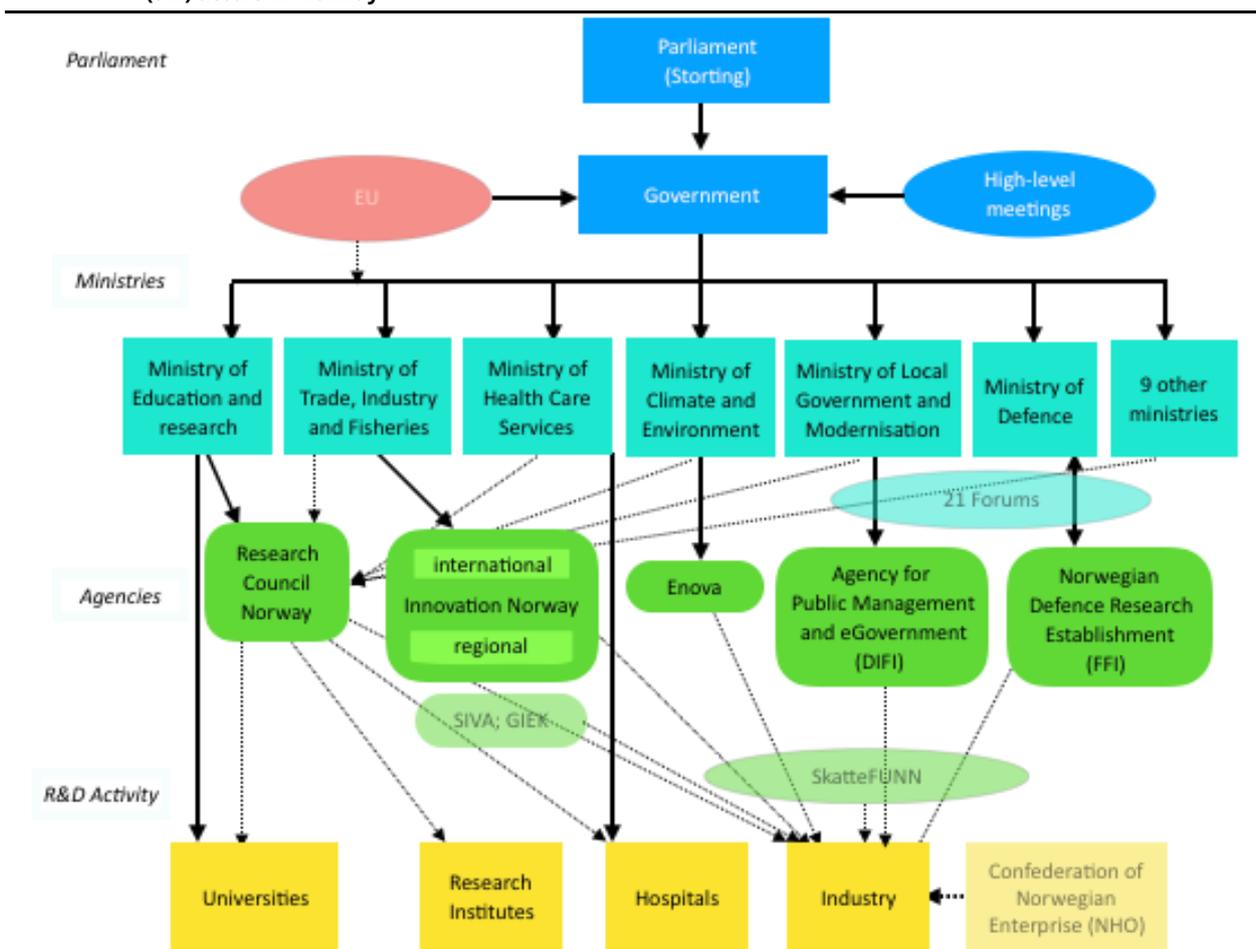
³ In international R&D statistics the Norwegian business enterprise sector includes the enterprises (here industrial sector) and in addition business-oriented institutes that primarily serve business. This is according to OECD guidelines (OECD, 2015, Frascati Manual).

has been maintained. Statistics Norway is from 2022 responsible for reporting all STI statistics to Eurostat and the OECD.

Norway has recently undergone a transformation in digital support services to the research and higher education sector by reforming the key agencies. The Norwegian Directorate for Higher Education and Skills (HK-dir) was established in 2021 and is subordinate to the Ministry of Education and Research. The Directorate is a result of the merger of Diku (Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education), Competence Norway, Universell and parts of Unit and the Norwegian Centre for Research Data (NSD) and has also been taking over tasks for the Norwegian Agency for Quality Assurance in Education (NOKUT). The Directorate has an overall, national responsibility for administrative tasks within higher education, higher vocational education and competence policy and gives advice to the ministry, implements the policy, and coordinates the tools. In 2022, an additional agency under the Ministry of Education and Research was established: Sikt – Norwegian Agency for Shared Services in Education and Research. Its main tasks are to provide access to high-quality infrastructure, sharing of data and high information security in the sector.

The figure provides a simplified picture of the organisation and the division of labour in the Norwegian R&D and innovation system, including the international dimension (EU).

Figure 1.1 The Norwegian system of education, research and innovation. Main Science, Technology and Innovation (STI) actors in Norway¹



¹ SIVA–The Industrial Development Corporation of Norway. GIEK–The Norwegian Export Credit Guarantee Agency.

ENOVA: A state-owned enterprise for the restructuring of energy use and energy production.

SkatteFUNN: The Norwegian tax deduction scheme.

Source: The Research Council of Norway (2021): Science and Technology Indicators for Norway 2021.

2. Data and methods

2.1. R&D personnel data

Data on R&D personnel cover each department/research institutes for three years; 2013, 2017 and 2021. While the 2021 figures are the most relevant for the evaluation, figures from 2013 and 2017 are presented to show the development in the research population over a period of almost ten years. Statistics are also available for intermediate years. However, to reduce the amount of data presented, the analysis has been limited to these years. The statistics provide detailed information on these indicators:

- number of persons (researchers)
- share of women
- share of PhD-degrees
- share of foreign PhD-degrees
- average age
- share of persons above 62 years and older
- group of academic positions

In the higher education sector, the academic positions are grouped into these categories:

- professors (i.e., full professors)
- associate professors
- researchers and postdoctoral fellows (postdocs)
- PhD-students

Other tenured staff (i.e., university lecturer, senior lecturer, head of department, docent, and dean) which constitutes a total of 47 persons are excluded from the data since these positions have teaching as their main task.

The position structure in the institute sector is very diverse, the personnel in this sector is therefore not split into different groups.

About the indicators:

- number of persons (researchers) gives the scope of research of each unit and the total population of the evaluation. This can be considered as an input indicator.
- share of women gives information on gender balance for each academic position for all units, and the average of the evaluated units. Promoting gender balance is a top priority for ethical, legal, and quality reasons. In the EU as well as in the Research Council of Norway it is a high-priority task to ensure that the best research talents and a breath of perspectives are included.
- share of personnel with a PhD-degree gives a measure for the level of PhD-holders for all positions and units. A high level of PhD-degrees among the R&D personnel can be a measure of a high level of competence within a position group or a unit and provides information on the recruitment situation.
- share of foreign PhD-degrees among the R&D personnel, gives a measure of foreign researchers since most of the foreign PhD-holders in Norway are foreign researchers.
- average age provides information on the average age for all academic position and can be used to assess future recruitment needs.

- share of R&D personnel who are 62 years and older provides information on the share of persons who have reached the age for contractual early retirement (AFP). The most common age for retirement in Norway is 67 years old. However, many professors at the universities work until they are 70 years or older. A high level of R&D personnel over 62 years indicates recruitment needs in the next few years.
- groups of academic positions show the composition of the staff and comparisons can highlight whether the composition is biased on top (professor) level or starting level (PhD-students).

A list of the units in the evaluation is presented for the higher education sector in Table 2.1 and the institute sector in Table 2.2. The tables show how the administrative units correspond to the units in the Register of Research Personnel. In most cases, we have figures for all the units in the evaluations and on the same level. When data are missing, this is commented.

Table 2.1 Overview of the units included in the evaluation in the higher education sector. 2021

Institution	Department	Comment
Norwegian University of Science and Technology	Department of Chemical Engineering	The whole department is included in this report
Norwegian University of Science and Technology	Department of Chemistry	The whole department is included in this report
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	The whole department is included in this report
Norwegian University of Science and Technology	Department of Materials Science and Engineering	The whole department is included in this report
Norwegian University of Science and Technology	Department of Physics	The whole department is included in this report
UiT The Arctic University of Norway	Department of Chemistry	The whole department is included in this report
UiT The Arctic University of Norway	Department of Earth sciences	The whole department is included in this report
UiT The Arctic University of Norway	Department of Physics and Technology	The whole department is included in this report
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	The whole institution (4 departments) is included in this report
University of Bergen	Department of Chemistry	The whole department is included in this report
University of Bergen	Department of Earth Science	The whole department is included in this report
University of Bergen	Department of Physics and Technology	The whole department is included in this report
University of Bergen	Geophysical Institute	The whole department is included in this report
University of Oslo	Department of Chemistry	The whole department is included in this report
University of Oslo	Department of Earth sciences	The whole department is included in this report
University of Oslo	Department of Physics	The whole department is included in this report
University of Oslo	Institute of Theoretical Astrophysics	The whole department is included in this report
University of Stavanger	Department of Energy Resources	The whole department is included in this report

Source: Statistics Norway

An overview of the research institutes is presented in Table 2.2. In the Register of Research Personnels, none of the institutes are split into smaller department or research group. Figures for the entire institute, are therefore included in the analysis.

Table 2.2 Overview of the evaluated administrative units in the institute sector. 2021

Research institute	Comment
CICERO Center for International Climate Research	The whole institute is included in this report
Geological Survey of Norway	The whole institute is included in this report
Nansen Environmental and Remote Sensing Center	The whole institute is included in this report
NORCE Norwegian Research Centre (Climate and Environment division) ¹	The division of climate and environment is included in this report
NORSAR	The whole institute is included in this report
NORSUS Norwegian Institute for Sustainability Research	The whole institute is included in this report
Norwegian Geotechnical Institute	The whole institute is included in this report
Norwegian Institute for Air Research	The whole institute is included in this report, not only Environmental Chemistry department
SINTEF Digital	The whole institute is included in this report
SINTEF Industry	The whole institute is included in this report
The Norwegian Meteorological Institute	The whole institute is included in this report
The Norwegian Water Resources and Energy Directorate	The whole institute is included in this report

¹ Norce was established in July 2017 and is a merger of the research institutes Agderforskning, Christian Michelsen Research, GenØk - Center for biosafety, International Research Institute of Stavanger (IRIS), Norut - Northern Research Institute, Uni Research Polytec, Uni Research and Teknova.

Source: Statistics Norway

2.2. The Register of Research Personnel

The Register of Research Personnel at Statistics Norway is a part of the national R&D statistics. The register contains individual-level data on researchers/academic staff involved in R&D and higher administrative staff in the higher education sector and the institute sector, including health trusts with and without university functions. It provides data on individuals employed in positions which require competence at the master's degree level or higher. Researchers in the higher education sector are identified by their position codes.

The register contains the following variables for each individual: name, age, gender, academic position, affiliation by institution, faculty, department, education (degree, field and year) doctoral degree (type, field, year, country), subject field (i.e., department field).

The main sources of information for this register are higher education institutions, health trusts and research institutes. From 2016 the data on the higher education sector is mainly obtained via Data and Statistics from the Directorate for Higher Education and Skills (HK-directorate) which receive data from higher education institutions.

2.3. R&D expenditures

In this report, current R&D expenditures are included to show the research volume. Current expenditures include salary, other personnel, and other current costs, while investments for scientific equipment and building costs are excluded. R&D expenditures are, together with personnel statistics input indicators for resources on R&D.

2.4. Field classification in the higher education sector

In the official R&D statistics of the higher education sector, all university departments are assigned to one, and only one field of R&D (e.g., biological sciences, mathematics, informatics, and so on). In the R&D statistical questionnaire, each unit can classify their research in many fields. However, since each unit can only be assigned to one specific field, the largest field in this classification, will be the assigned field for the unit. This principle is called the maximum classification criteria and is used in the official figures of R&D statistics, also for R&D personnel belonging to a specific institute.

However, most university departments conduct research within several fields. Due to the above-mentioned principle of classification, this will not appear in the official R&D statistics. In some analyses, it is useful to show the entire width of the research fields of the unit (from the R&D questionnaire) by specific field classification. In this evaluation, we will present figures using both methods. When the specific field classification is used, it will be specified.

In official R&D statistics, the term natural sciences will include more fields than the number of fields among the evaluated units. The term natural sciences in official R&D is hence broader than in this evaluation. Natural sciences in official R&D statistics include the following fields: mathematics, informatics, physics, earth sciences, chemistry, and biological sciences.

3. Higher education sector

This part includes R&D personnel statistics for the units in the higher education sector. The first tables contain aggregated data and summary tables for the units which are included in the evaluation. Then statistics for each unit (i.e., university department) are presented.

3.1. Overall R&D personnel figures

R&D personnel or to be more precise: researchers within the evaluation units included about 1,650 people working in the higher education sector in 2021. The number of researchers in these units increased by 31 per cent from 2013 to 2021.

Earth sciences were the largest field of R&D with about 35 per cent of the total number of researchers in 2021 and had an increase in personnel at almost 60 per cent since 2013. The second largest field was physics which accounted for about one-third of the total number of researchers in 2021 and had an increase in personnel at about 28 per cent since 2013. Researchers within chemistry were the third largest and accounted for about 30 per cent of total researchers and had an increase in personnel since 2013 of just 11 per cent.

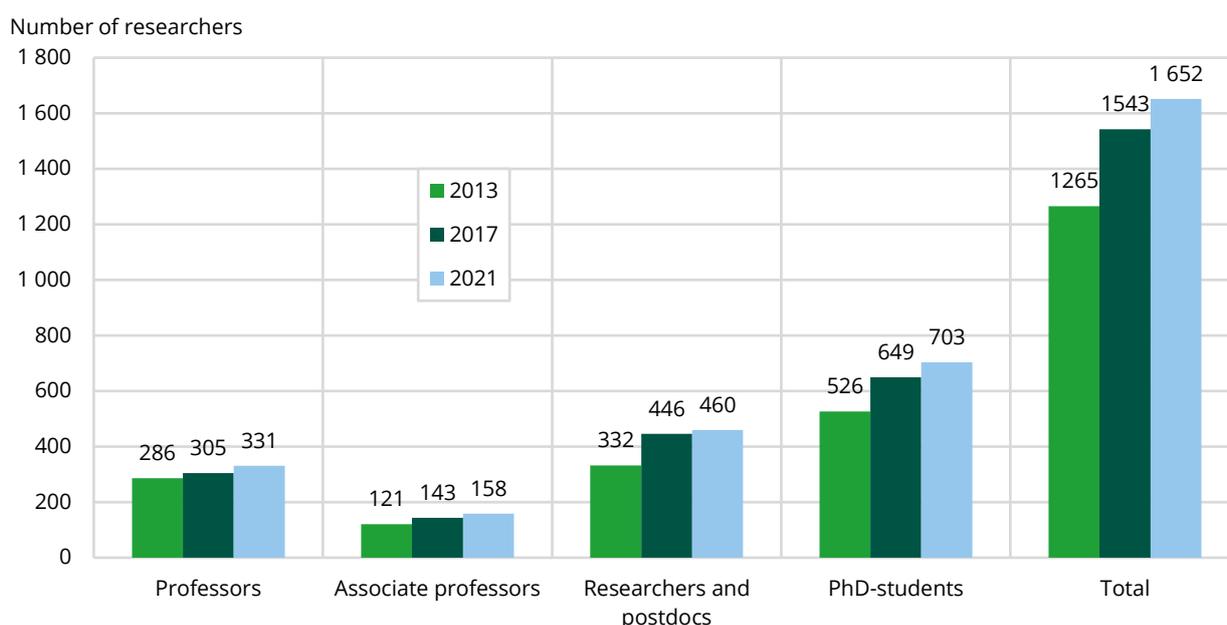
None of the departments have changed fields of R&D during the period. This is according to information from the R&D survey.

Table 3.1 Number of researchers participating in the natural science evaluation in the higher education sector by fields. 2013, 2017, 2021. Percentage growth

Fields	2013	2017	2021	Growth (2013-2021)
Earth sciences	369	559	581	57
Physics	431	463	552	28
Chemistry	444	500	493	11
Biosciences	13	13	17	31
Unspecified technology	8	8	9	13
Total	1,265	1,543	1,652	31

Source: Statistics Norway

Figure 3.1 Total number of researchers in the higher education sector by academic positions in 2013, 2017 and 2021. Units in the evaluation of natural sciences

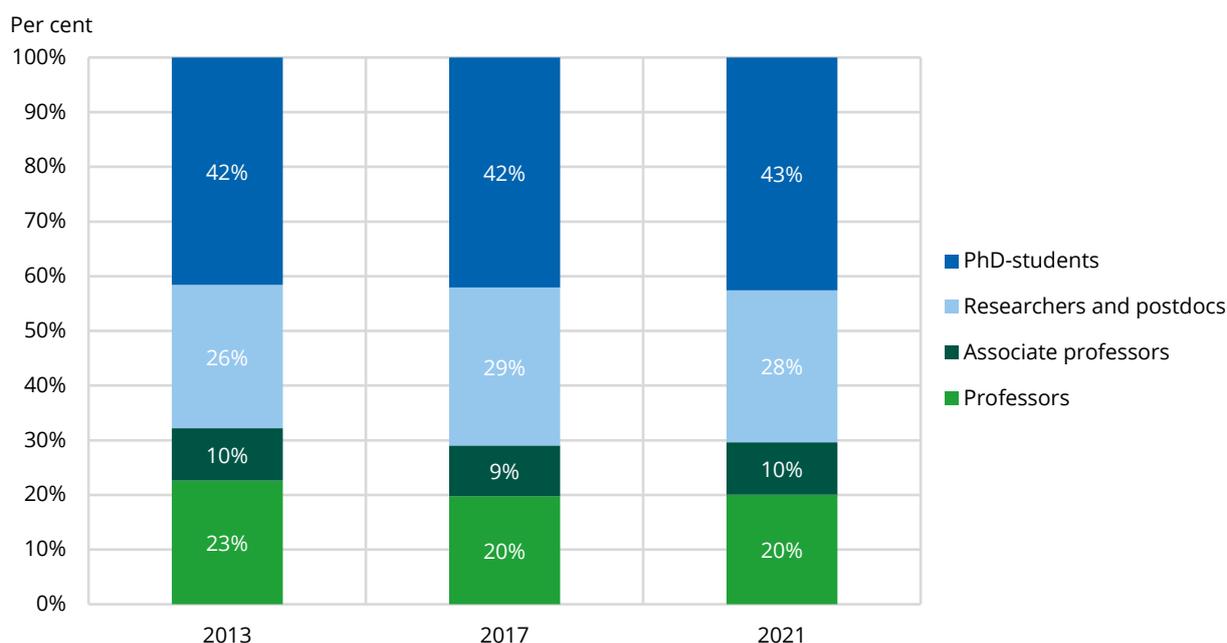


Source: Statistics Norway

In total, all position groups increased between 2013 and 2021 (Figure 3.2). Researchers and postdocs had the strongest increase, while professors had the smallest increase. In general, the number of researchers increased from 1, 265 in 2013 to 1,652 in 2021. In 2021, there were 331 professors, 158 associate professors, 460 researchers/postdocs and 703 PhD-students included in the higher education sector evaluation units in 2021.

The sizes of academic position groups vary among the units (Figure 3.2 and Table 3.4). In 2021, professors account for about 20 per cent and associate professors 10 per cent. However, researchers and postdocs and PhD students are the largest groups and account for 28 and 43 per cent respectively.

Figure 3.2 Share of researchers by academic positions at university departments in 2013, 2017 and 2021. Units in the evaluation of natural sciences

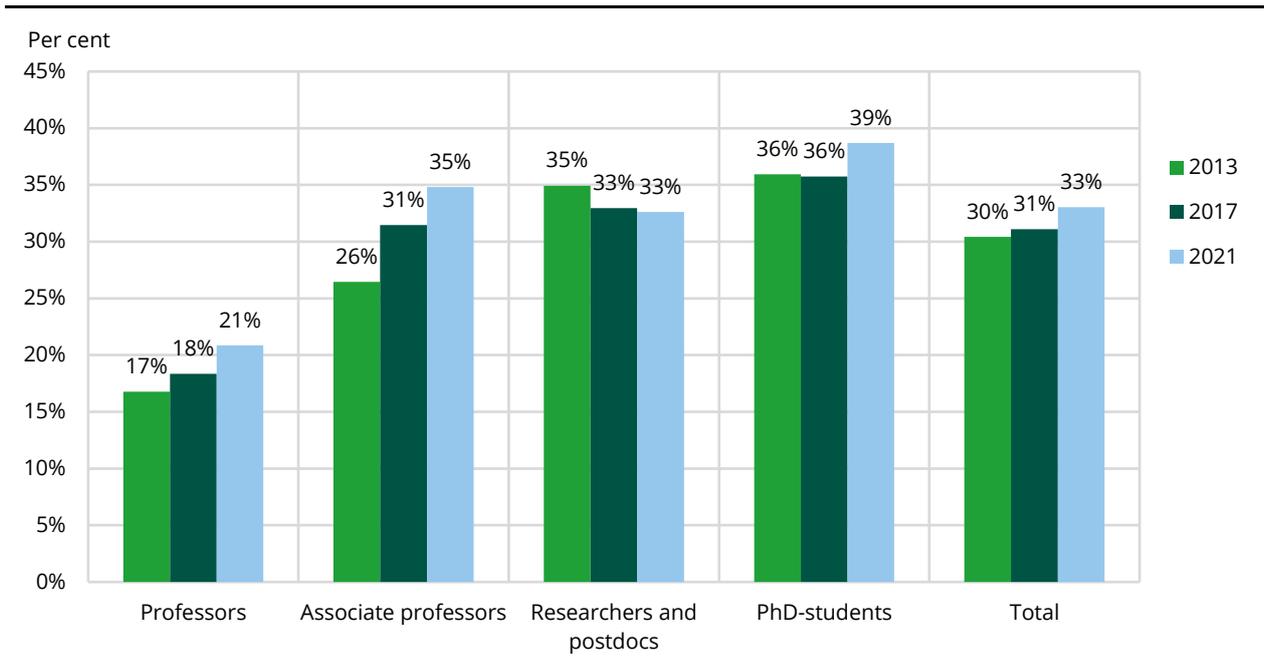


Source: Statistics Norway

The gender balance varies among the position groups, and the share of women decreases at higher position levels. About 40 per cent of the PhD-students are women, while women account for only 21 per cent of the professors. Among researchers and postdocs and associate professors, women account for about one-third of the population. Although the share of women among professors is low, it has increased since 2013 by 4 percentage points.

Data for the entire higher education sector is presented in connection with the tables, later in this chapter.

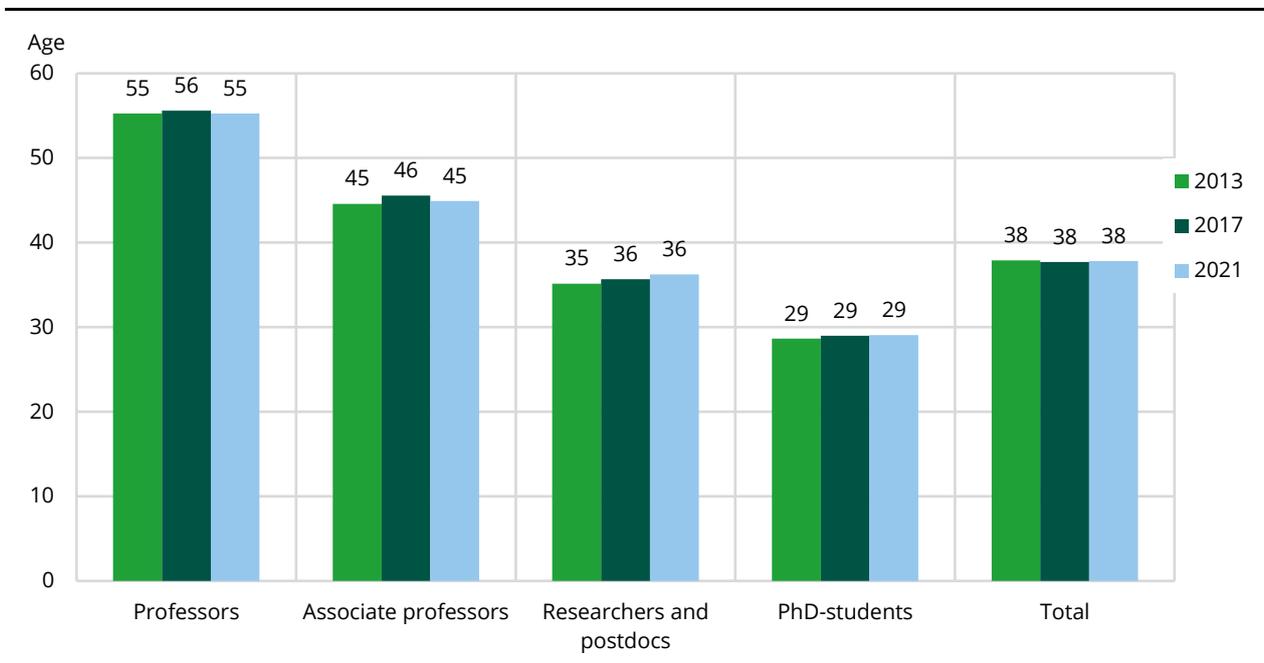
Figure 3.3 Share of female researchers by academic position in 2013, 2017 and 2021. Units in the evaluation of natural sciences



Source: Statistics Norway

The average age of the population of the university departments (included in this report) was 38 years in 2021, and this was the same as in 2013 and 2017. Overall, the average age for all positions has been quite stable over the period. The average age for professors was 55 years in both 2021 and 2013, while it was 56 years in 2017.

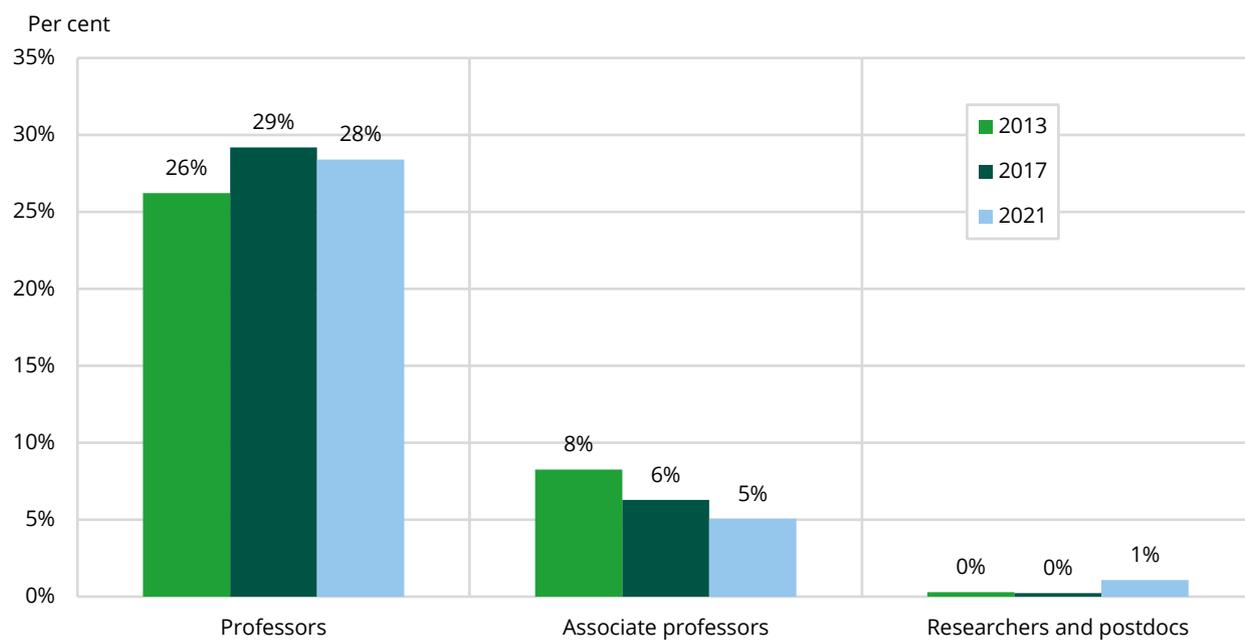
Figure 3.4 Average age of the researchers by academic position in 2013, 2017 and 2021. Units in the evaluation of natural sciences



Source: Statistics Norway

The retirement age in Norway is 67 years, but it is possible to retire at 62 years. Figure 3.5 shows that 28 per cent of the professors in 2021 were 62 years or older, and the share increased from 26 per cent in 2013 to 29 per cent in 2017. Of the associate professors, only 5 per cent were 62 years or older.

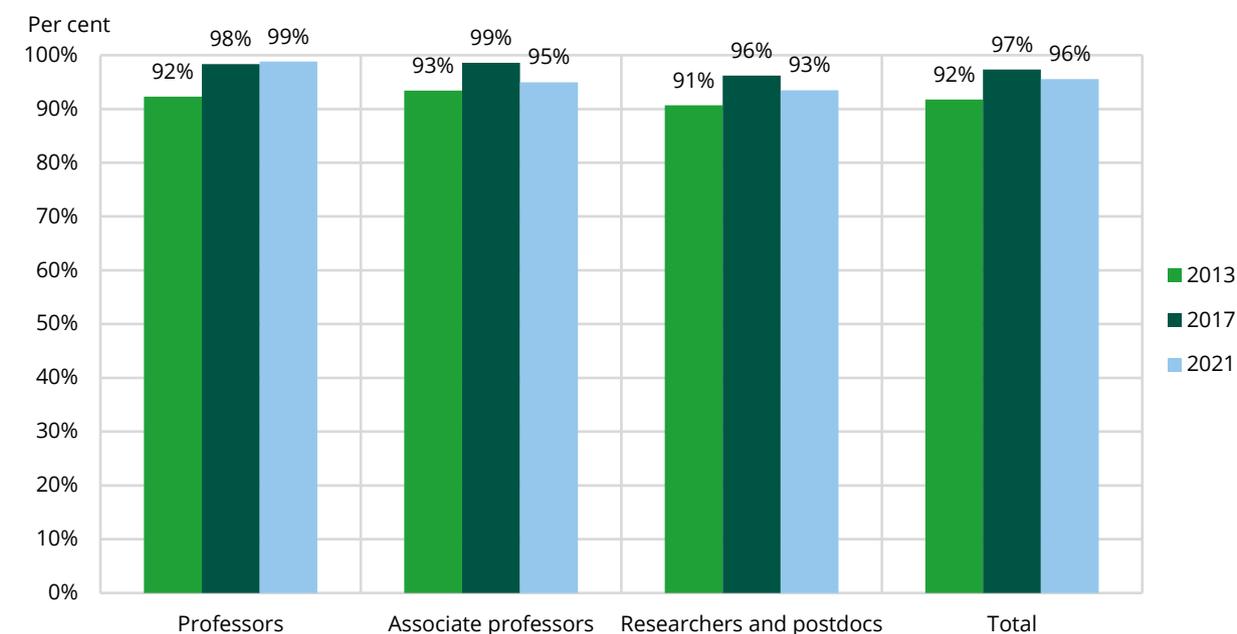
Figure 3.5 Share of researchers aged 62 years and older by academic position in 2013, 2017 and 2021. Units in the evaluation of natural sciences



Source: Statistics Norway

The PhD-density among the researchers in the evaluation was very high. Almost all the staff in the evaluation holds a PhD-degree in 2021.

Figure 3.6 Share of researchers with PhD-degree by academic position in 2013, 2017 and 2021. Units in the evaluation of natural sciences



Source: Statistics Norway

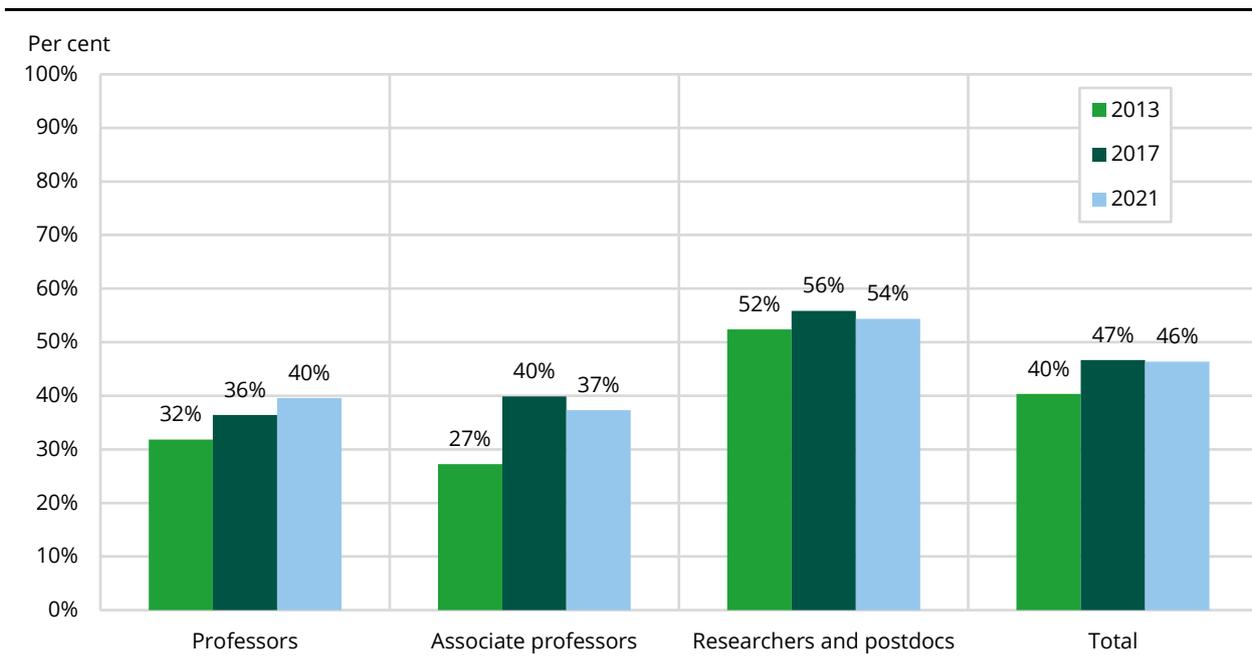
Most of the foreign PhD-degree holders are foreign researchers. Based on this, it can be assumed that foreign researchers account for about 46 per cent of the population (except PhD-students) in 2021 (Figure 3.7). Among the professors, 40 per cent have a foreign PhD degree, while the share is 37 per cent for associate professors. Researchers and postdocs have the highest share of foreign PhD with about 54 per cent.

As we use foreign PhD-degree as an indicator for foreign citizenship, we are not able to estimate the share of foreign citizenship among PhD-students. However, from the official statistics on awarded doctoral degrees, we know that 43 per cent of awarded doctoral degrees were foreigners and as much as 63 per cent were foreigners within natural sciences.

Based on these numbers, it can be assumed that most likely more than half of the researchers within this evaluation are foreign citizens in the higher education sector.

In addition to the researchers with foreign PhD-degrees, there are also foreign researchers who complete their doctoral degrees in Norway. The actual number of foreign researchers is hence higher than what is presented here. However, as we do not have data on citizenship in the Register of research personnel, the presented numbers are estimates of foreign citizenship.

Figure 3.7 Share of researchers with foreign PhD-degree by academic position in 2013, 2017 and 2021. Units in the evaluation of natural sciences



Source: Statistics Norway

In the following Tables 3.2–3.8 data for each of the units included in the natural science evaluation from the higher education sector are presented together with some overall figures for the higher education sector.

Table 3.2 Researchers in units included in the evaluation of natural sciences by the main field of R&D. Higher education sector. 2013, 2017, 2021

Institution	Department	Field of R&D in 2021	2013	2017	2021
Norwegian University of Science and Technology	Department of Chemical Engineering	Chemistry	94	101	108
Norwegian University of Science and Technology	Department of Chemistry	Chemistry	52	52	53
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	Earth sciences	54	110	88
Norwegian University of Science and Technology	Department of Materials Science and Engineering	Chemistry	80	145	115
Norwegian University of Science and Technology	Department of Physics	Physics	113	120	126
UiT The Arctic University of Norway	Department of Chemistry	Chemistry	67	69	74
UiT The Arctic University of Norway	Department of Earth sciences	Earth sciences	36	65	71
UiT The Arctic University of Norway	Department of Physics and Technology	Physics	41	64	106
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard (4 departments)	Earth sciences/ Physics/ Biosciences/ Technology	53	53	60
University of Bergen	Department of Chemistry	Chemistry	48	59	58
University of Bergen	Department of Earth Science	Earth sciences	89	124	112
University of Bergen	Department of Physics and Technology	Physics	87	84	111
University of Bergen	Geophysical Institute	Earth sciences	52	74	92
University of Oslo	Department of Chemistry	Chemistry	103	74	85
University of Oslo	Department of Earth sciences	Earth sciences	119	168	162
University of Oslo	Department of Physics	Physics	140	143	128
University of Oslo	Institute of Theoretical Astrophysics	Physics	37	38	64
University of Stavanger	Department of Energy Resources	Earth sciences			39
Total			1,265	1,543	1,652

Source: Statistics Norway

Table 3.2 shows the number of researchers in the 18 evaluated units in the higher education sector for the years 2013, 2017 and 2021, by field in 2021. There was a growth of 31 per cent from 2013 to 2021. This is slightly below the growth of the higher education sector in total. Overall, there was a growth in the total number of researchers in the higher education sector of 35 per cent from 2013 to 2021. The evaluated units had a growth of 22 percentage points below the total from 2013 to 2017 and 7 percentage points below from 2017 to 2021.

The table also includes a column for the units' fields of R&D based on the maximum classification criteria (see section 2.4). Six of the units are classified as chemistry (i.e., most of their research is within chemistry), six of the units are classified as Earth sciences and five as physics. In addition, one unit is presented by several departments (i.e., consisting of four departments) covering several fields (Earth sciences/Physics/Biosciences/Technology).

Table 3.3 Number of researchers by academic positions and university department in 2021

Institution	Department	Researchers				Total
		Pro-fessors	Associate professors	and postdocs	PhD-students	
Norwegian University of Science and Technology	Department of Chemical Engineering	12	7	26	63	108
Norwegian University of Science and Technology	Department of Chemistry	11	7	10	25	53
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	24	11	12	41	88
Norwegian University of Science and Technology	Department of Materials Science and Engineering	19	14	27	55	115
Norwegian University of Science and Technology	Department of Physics	29	16	22	59	126
UiT The Arctic University of Norway	Department of Chemistry	12	1	25	36	74
UiT The Arctic University of Norway	Department of Earth sciences	14	6	22	29	71
UiT The Arctic University of Norway	Department of Physics and Technology	15	8	37	46	106
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	13	12	16	19	60
University of Bergen	Department of Chemistry	15	10	10	23	58
University of Bergen	Department of Earth Science	25	14	31	42	112
University of Bergen	Department of Physics and Technology	23	11	31	46	111
University of Bergen	Geophysical Institute	18	6	37	31	92
University of Oslo	Department of Chemistry	21	9	14	41	85
University of Oslo	Department of Earth sciences	31	8	71	52	162
University of Oslo	Department of Physics	34	7	40	47	128
University of Oslo	Institute of Theoretical Astrophysics	9	4	19	32	64
University of Stavanger	Department of Energy Resources	6	7	10	16	39
Total		331	158	460	703	1,652

Source: Statistics Norway

Table 3.4 Share of researchers by academic positions and university departments in 2021

Institution	Department	Pro-fessors	Associate professors	Researchers and postdocs	PhD-students
Norwegian University of Science and Technology	Department of Chemical Engineering	11	6	24	58
Norwegian University of Science and Technology	Department of Chemistry	21	13	19	47
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	27	13	14	47
Norwegian University of Science and Technology	Department of Materials Science and Engineering	17	12	23	48
Norwegian University of Science and Technology	Department of Physics	23	13	17	47
UiT The Arctic University of Norway	Department of Chemistry	16	1	34	49
UiT The Arctic University of Norway	Department of Earth sciences	20	8	31	41
UiT The Arctic University of Norway	Department of Physics and Technology	14	8	35	43
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	22	20	27	32
University of Bergen	Department of Chemistry	26	17	17	40
University of Bergen	Department of Earth Science	22	13	28	38
University of Bergen	Department of Physics and Technology	21	10	28	41
University of Bergen	Geophysical Institute	20	7	40	34
University of Oslo	Department of Chemistry	25	11	16	48
University of Oslo	Department of Earth sciences	19	5	44	32
University of Oslo	Department of Physics	27	5	31	37
University of Oslo	Institute of Theoretical Astrophysics	14	6	30	50
University of Stavanger	Department of Energy Resources	15	18	26	41
Total		20	10	28	43

Source: Statistics Norway

In Table 3.4 the total number of researchers at the evaluated institutions is presented by position group. Overall PhD-students is the largest group with 43 per cent, but their relative size differs among the units. From 32 per cent at UNIS and the Department of Earth sciences at the University of Oslo up to 50 per cent at the Department of Energy Resources at the University of Oslo and even 58 per cent at the Department of Chemical Engineering at the Norwegian University of Science and Technology. Only at the Geophysical department at the University of Bergen the group of researchers and postdocs constitutes a larger group than PhD students with 44 per cent. Overall professors make up 20 per cent of the research personnel and associate professors make up 10 per cent of staff, also this share differs a lot in size as shown in the table.

Table 3.5 Share of female researchers by academic positions and university department in 2021. Per cent

Institution	Department	Professors	Associate professors	Researchers and postdocs	PhD-students	Total
Norwegian University of Science and Technology	Department of Chemical Engineering	33	14	42	25	30
Norwegian University of Science and Technology	Department of Chemistry	18	29	40	32	30
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	8	18	33	27	22
Norwegian University of Science and Technology	Department of Materials Science and Engineering	32	43	33	40	37
Norwegian University of Science and Technology	Department of Physics	24	31	32	34	31
UiT The Arctic University of Norway	Department of Chemistry	17	0	32	44	35
UiT The Arctic University of Norway	Department of Earth sciences	29	83	36	55	46
UiT The Arctic University of Norway	Department of Physics and Technology	20	25	30	33	29
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	31	58	56	42	47
University of Bergen	Department of Chemistry	20	30	20	43	31
University of Bergen	Department of Earth Science	12	21	29	43	29
University of Bergen	Department of Physics and Technology	13	18	23	33	24
University of Bergen	Geophysical Institute	6	50	49	55	42
University of Oslo	Department of Chemistry	24	22	7	46	32
University of Oslo	Department of Earth sciences	35	38	41	50	43
University of Oslo	Department of Physics	21	57	23	49	34
University of Oslo	Institute of Theoretical Astrophysics	11	50	21	28	25
University of Stavanger	Department of Energy Resources	17	43	0	19	18
Total		21	35	33	39	33

Source: Statistics Norway

Table 3.5 presents gender balance at the different institutions by share of female researchers among the different position groups. For the higher education sector in total, the share of women among full professors was 34 per cent in 2021, and within natural sciences the share was 21 per cent. The units in the evaluation match this share at 21 per cent women among professors. Two units have a very skewed gender balance with less than 10 per cent women at the professor level: the Department of Geoscience and Petroleum at the Norwegian university of Science and Technology and the Geophysical Institute at the University of Bergen.

For associate professors the share of women is 51 per cent for the total higher education sector. For natural sciences, at the national level, the share of women among associate professors is lower at 39 per cent. The units in the evaluation have 35 per cent women among the associated professors.

For postdocs and researchers there is a gender balance of about 50 per cent for the higher education sector in total. For the natural sciences in general there is a gender balance of 38 per cent women. The units in the evaluation have a gender balance of 37 per cent women. For PhD-students there is a majority of women at 55 per cent for the higher education sector, 45 per cent for natural sciences and a bit lower at 39 per cent among the units in this evaluation.

Table 3.6 Share of professors, associate professors and postdoc/researchers with PhD-degree in 2021

Institution	Department	Professors	Associate professors	Researchers and postdocs	Total
Norwegian University of Science and Technology	Department of Chemical Engineering	100	100	96	98
Norwegian University of Science and Technology	Department of Chemistry	91	100	100	96
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	100	100	92	98
Norwegian University of Science and Technology	Department of Materials Science and Engineering	100	86	78	87
Norwegian University of Science and Technology	Department of Physics	100	100	100	100
UiT The Arctic University of Norway	Department of Chemistry	92	100	92	92
UiT The Arctic University of Norway	Department of Earth sciences	100	100	91	95
UiT The Arctic University of Norway	Department of Physics and Technology	100	88	92	93
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	100	83	88	90
University of Bergen	Department of Chemistry	100	90	100	97
University of Bergen	Department of Earth Science	100	100	97	99
University of Bergen	Department of Physics and Technology	100	100	100	100
University of Bergen	Geophysical Institute	100	83	81	87
University of Oslo	Department of Chemistry	95	89	100	95
University of Oslo	Department of Earth sciences	97	100	99	98
University of Oslo	Department of Physics	100	100	90	95
University of Oslo	Institute of Theoretical Astrophysics	100	100	100	100
University of Stavanger	Department of Energy Resources	100	100	100	100
Total		99	95	93	96

Source: Statistics Norway

Table 3.6 show that in sum 96 per cent of the professors, associate professors and postdoc/researchers holds a PhD-degree. All these academic positions require a PhD or equivalent, so this is somehow expected. For the Norwegian higher education sector in total the share with a PhD-degree among these position groups is 90 per cent.

Table 3.7 Share of professors, associate professors, and postdoc/researchers with foreign PhD-degree in 2021.

Institution	Department	Professors	Associate professors	Researchers and postdocs	Total
Norwegian University of Science and Technology	Department of Chemical Engineering	17	29	35	29
Norwegian University of Science and Technology	Department of Chemistry	27	57	70	50
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	50	36	58	49
Norwegian University of Science and Technology	Department of Materials Science and Engineering	26	21	37	30
Norwegian University of Science and Technology	Department of Physics	45	50	73	55
UiT The Arctic University of Norway	Department of Chemistry	33	100	28	32
UiT The Arctic University of Norway	Department of Earth sciences	57	50	36	45
UiT The Arctic University of Norway	Department of Physics and Technology	40	38	62	53
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	54	42	44	46
University of Bergen	Department of Chemistry	33	40	50	40
University of Bergen	Department of Earth Science	28	50	52	43
University of Bergen	Department of Physics and Technology	35	18	52	40
University of Bergen	Geophysical Institute	50	0	51	46
University of Oslo	Department of Chemistry	33	56	79	52
University of Oslo	Department of Earth sciences	45	38	72	62
University of Oslo	Department of Physics	32	14	48	38
University of Oslo	Institute of Theoretical Astrophysics	56	75	74	69
University of Stavanger	Department of Energy Resources	83	14	50	48
Total		40	37	54	46

Source: Statistics Norway

As mentioned in the introduction part, a foreign PhD-degree is an indicator of foreign citizenship, since most of the researchers with a foreign PhD-degree, will also be a foreigner. Among the evaluation units, as many as 46 per cent of the research personnel had a foreign doctoral degree, see Table 3.7. This is a higher share than in the total higher education where 14 per cent have a foreign doctoral degree and this is also higher than within natural sciences at 26 per cent. Among the professors in the evaluated units, 40 per cent have a foreign doctoral degree, and the share is a bit lower for associate professors at 37 per cent and higher for researchers and postdocs at 54 per cent.

Table 3.8 Average age of researchers by professors, associate professors, researchers, and postdoc, and share of professors 62 years and older, in 2021

Institution	Department	Professors	Associate professors	Researchers and postdocs	Share of full professors 62 years and older
Norwegian University of Science and Technology	Department of Chemical Engineering	56.1	46.3	37.1	33
Norwegian University of Science and Technology	Department of Chemistry	54.8	47.3	36.2	27
Norwegian University of Science and Technology	Department of Geoscience and Petroleum	58.7	46.5	41.8	50
Norwegian University of Science and Technology	Department of Materials Science and Engineering	54.1	42.9	35.3	26
Norwegian University of Science and Technology	Department of Physics	54.1	47.4	35.8	21
UiT The Arctic University of Norway	Department of Chemistry	53.8	40.0	39.8	33
UiT The Arctic University of Norway	Department of Earth sciences	56.1	38.8	35.2	36
UiT The Arctic University of Norway	Department of Physics and Technology	55.1	39.3	34.4	27
UNIS The university centre in Svalbard	UNIS The university centre in Svalbard	55.5	43.7	34.7	8
University of Bergen	Department of Chemistry	58.0	48.4	37.6	40
University of Bergen	Department of Earth Science	57.4	45.2	35.9	40
University of Bergen	Department of Physics and Technology	56.4	47.7	35.7	30
University of Bergen	Geophysical Institute	52.3	44.5	35.9	22
University of Oslo	Department of Chemistry	57.0	43.2	36.2	38
University of Oslo	Department of Earth sciences	56.0	43.3	37.1	23
University of Oslo	Department of Physics	52.8	47.7	36.4	15
University of Oslo	Institute of Theoretical Astrophysics	50.3	37.8	33.5	22
University of Stavanger	Department of Energy Resources	50.3	47.1	34.2	17
Total		55.3	44.9	36.2	28

Source: Statistics Norway

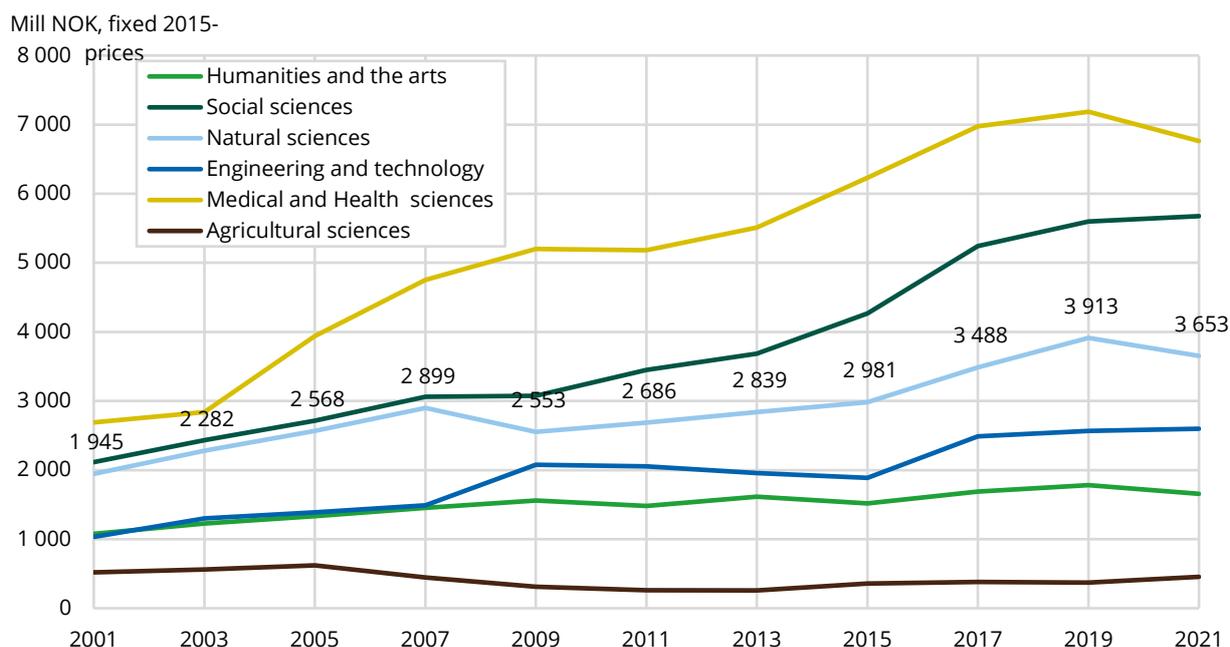
The average age of researchers in the evaluation units was 55.3 years for full professors, almost 45 years for associate professors and about 36 years for researchers and postdocs. For the higher education sector in total, the corresponding figures were respectively 56.0, 47.8 and 44.7 years old.

The R&D personnel in the evaluated units are younger than the total of the higher education sector: They are around a year younger at the professor levels and for the group of researchers and postdocs about 11 years younger. The share of full professors at 62 years and older was 28 per cent among the evaluated units.

3.2. R&D expenditures in the higher education sector 2021

R&D expenditure can be a measure for input to the research system. In 2021, current R&D expenditure in the higher education sector amounted to 24,3 billion NOK, which is about 1/3 of total R&D in Norway. This was a decrease of about 670 million NOK compared to 2019. R&D expenditure in natural sciences amounted to about 4.27 billion NOK in 2021. Figure 3.8 displays fixed prices, that are adjusted for inflation. While the expenditure in natural sciences had growth of about 88 per cent from 2001 to 2021, the total growth was 122 per cent in the same period. Social sciences had the largest growth in this period of almost 170 per cent, followed by engineering and technology and medicine and health sciences, both fields with a growth of about 150 per cent.

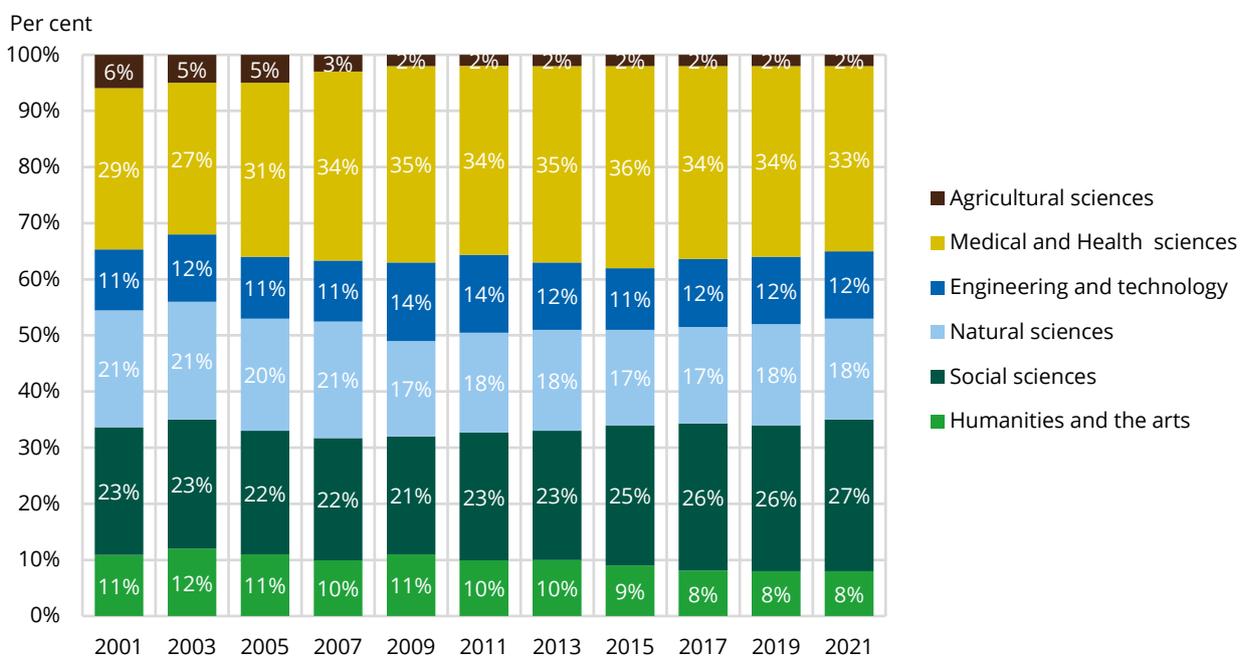
Figure 3.8 Current expenditure on R&D in the higher education sector by fields of R&D. 1991–2021. Mill. NOK fixed 2015-prices



Source: Statistics Norway

In the whole twenty-year period, natural sciences have been the third largest field of R&D. At the beginning of the period, natural sciences accounted for about 21 per cent of total R&D and have slowly decreased to about 17-18 per cent in 2009 and remained at this level until today.

Figure 3.9 Current expenditure on R&D in the higher education sector by fields of R&D. 2001–2021. Share of R&D of total R&D



Source: Statistics Norway

If we look into the fields of natural sciences (Figure 3.10), the most relevant fields to this evaluation are earth sciences, physics and chemistry. These fields are shown together with the rest of the natural sciences: mathematics, informatics, biological sciences and multidisciplinary natural sciences, to see how the fields have developed in the last 20 years. Figure 3.10 presents current R&D

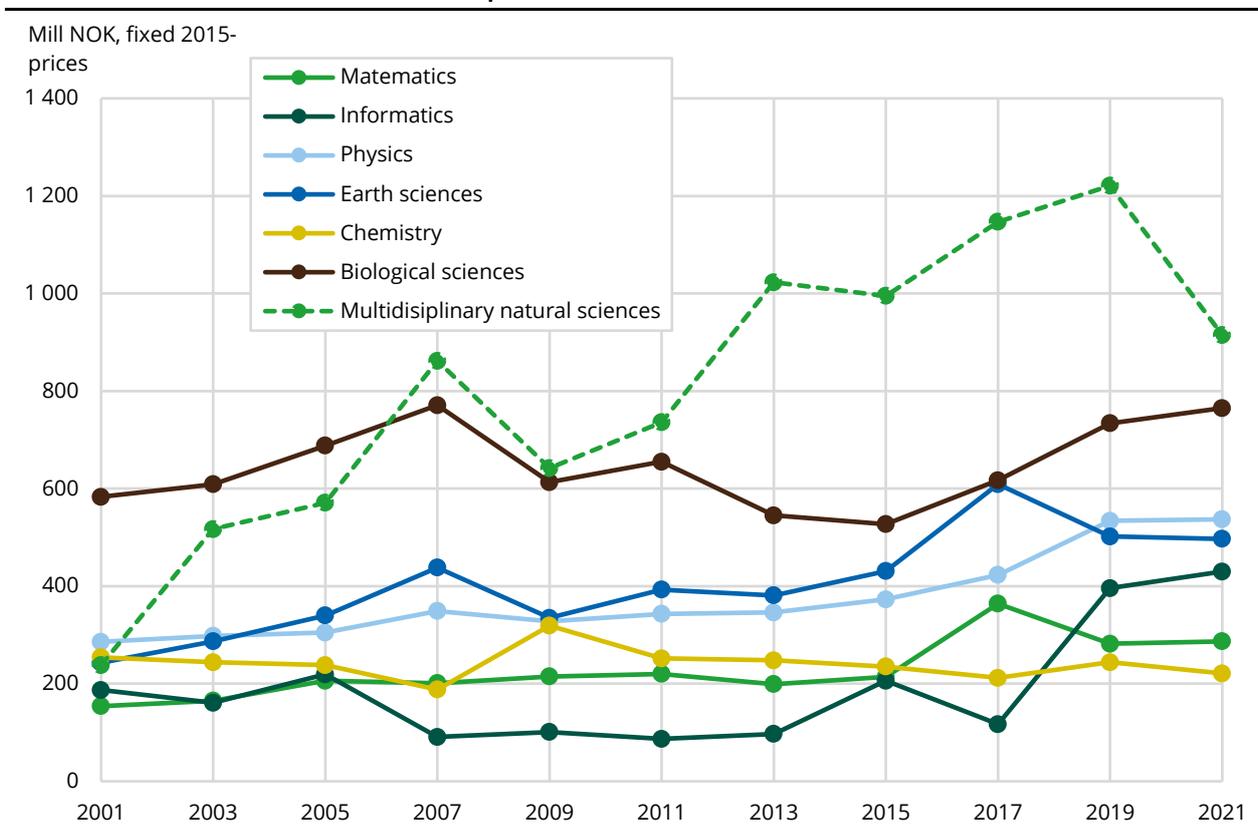
expenditures in fixed 2015 prices, which are adjusted for inflation, while Figure 3.11 presents the same figures as a share of total R&D expenditures. Both figures show the development for each field in 20 years from 2001 to 2021. The numbers are based on the university departments' field of R&D classifications, which are used in the official R&D statistics.

Earth sciences, chemistry and physics were about the same size in 2001, accounting for 12, 13 and 15 per cent of natural sciences respectively. Over the years earth sciences have had the strongest growth in R&D among these fields. The growth was a bit uneven in some years, but with a decrease after 2017, earth sciences accounted for 14 per cent of total R&D within natural sciences in 2021.

R&D within physics have had a more even growth and amounted to 15 per cent of natural sciences in 2015. Chemistry had a peak in 2009 but has had a decline or no real growth since then and accounted for 6 per cent of natural science R&D since 2017.

Respondents of the R&D survey classify large parts of their R&D activity within multidisciplinary natural sciences, and this may include R&D activity within several natural science subfields.

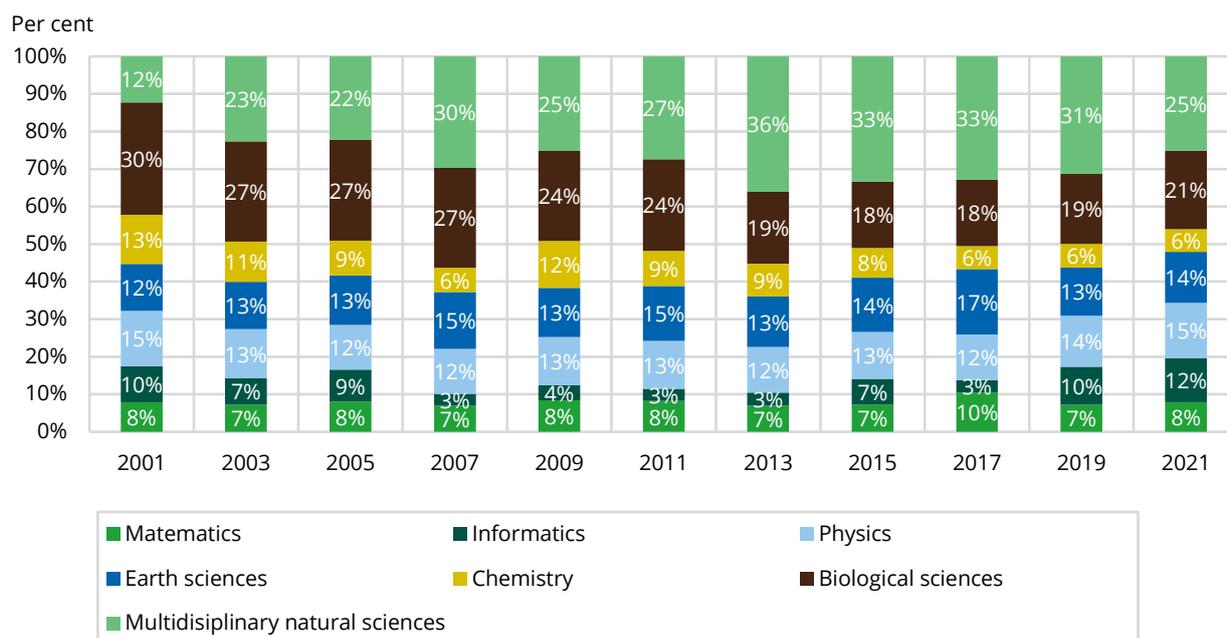
Figure 3.10 Current expenditure on R&D within natural sciences in the higher education sector by fields of R&D. 1991–2021. Mill. NOK fixed 2015-prices



Source: Statistics Norway

The development of current expenditure on R&D within natural sciences in the higher education sector is shown in Figure 3.11. We see that the share of R&D within chemistry is halved over the 20-years from 13 to 6 per cent. Earth sciences have increased from 12 to 14 per cent. R&D within physics amounted to 15 per cent at the beginning and end of the period, in the middle of the period there was a dip at 12 per cent.

Figure 3.11 Share of current expenditure on R&D within natural sciences in the higher education sector by fields of R&D. 1991-2021



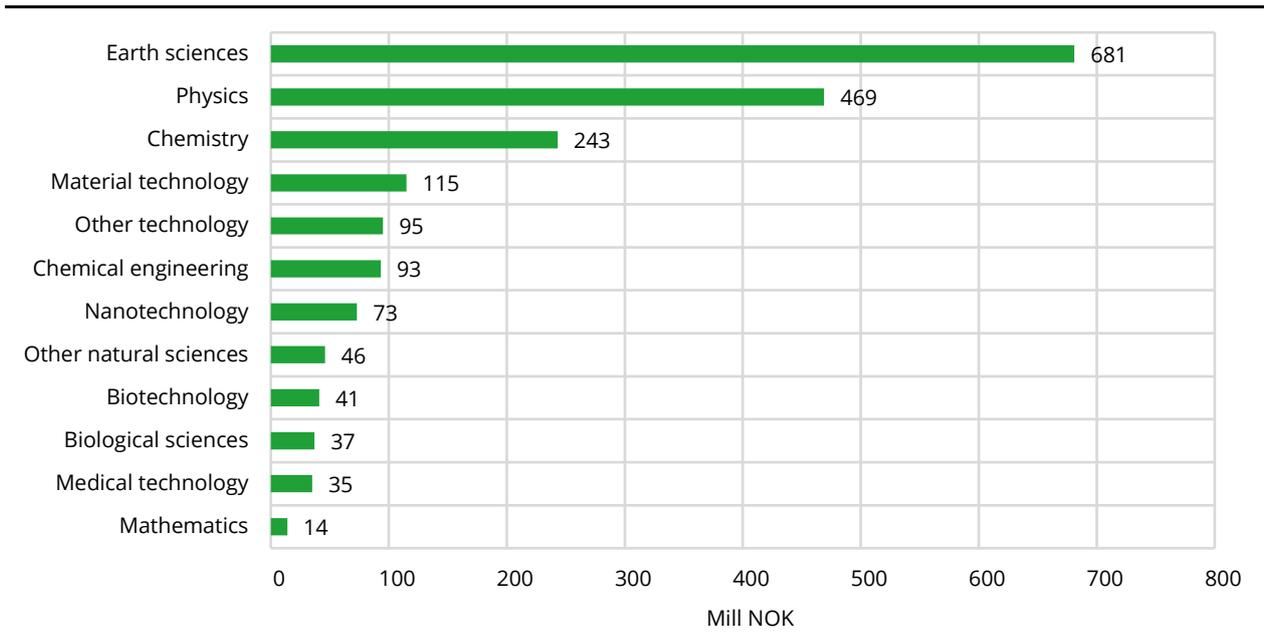
Source: Statistics Norway

3.3. R&D expenditure for the evaluated units in the higher education sector

The evaluated administrative units performed R&D for a total of 1.9 billion NOK in 2021. In Figures 3.12 and 3.13, the R&D activity by specific field classification is presented. See further explanation about field classification in section 2.4. A total of 77 per cent of the R&D expenditure the units had carried out, were within natural sciences, and the rest were within engineering and technology. The largest field among the evaluated units are earth sciences, with a total amount of about 680 million NOK. Then follows physics which accounted for about 470 million NOK. Chemistry is the third largest field with about 240 million NOK.

In addition to these fields, material technology and chemical engineering which accounted for about 115 and 93 million NOK, are also included in the R&D activity conducted by the units. Sometimes, these two latter fields are regarded as chemistry subfields, but in official R&D statistics, both are regarded as engineering and technology fields.

Figure 3.12 Current R&D expenditure by fields among units evaluated. Special field classification (aggregated). Mill NOK. 2021

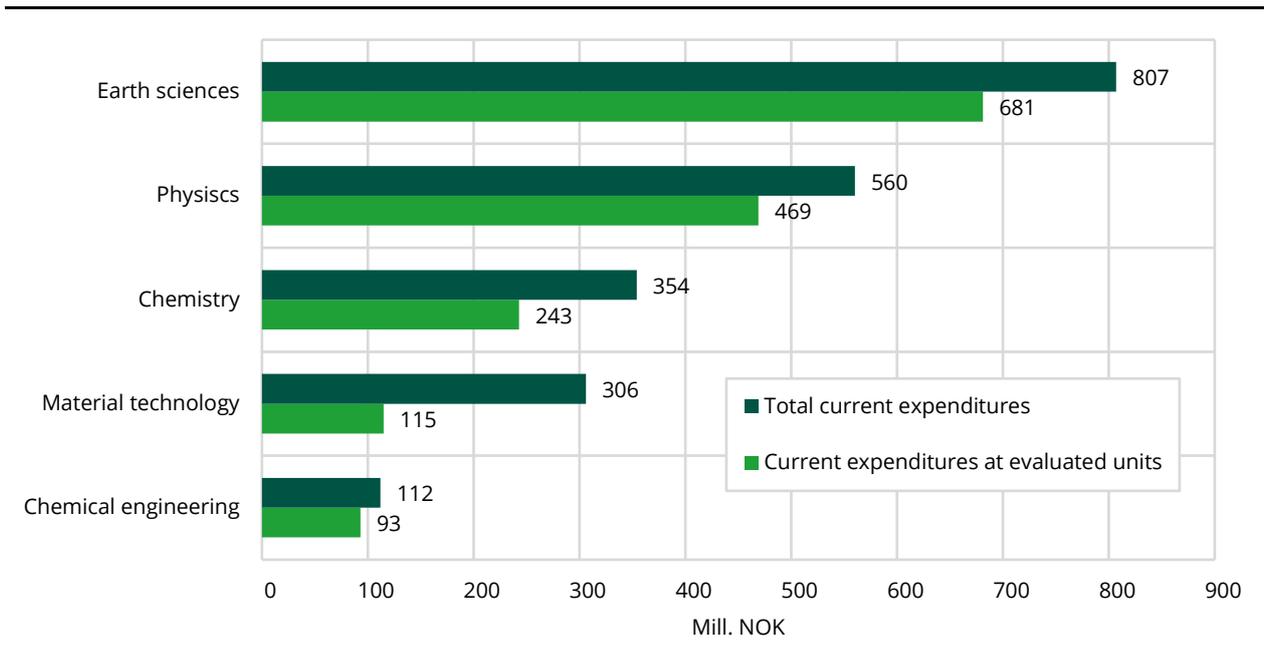


Source: Statistics Norway

Figure 3.13 shows R&D expenditures for the units included in the evaluation by selected fields, compared with the total current expenditures of the same fields in the higher education sector. The figures are based on responses from the R&D surveys by specific field classification. The figure is showing how well the units covered by the evaluation represents these fields.

For earth sciences, 85 per cent (681 of 807 million NOK) is covered by the units. For physics, around 84 per cent is covered, but in chemistry slightly less, 69 per cent is covered by the evaluated units. If we dig into the details of the R&D statistics and look at units within chemistry R&D which are not covered by this evaluation, these units conduct R&D mostly within pharmacy, material sciences, engineering, and multidisciplinary natural sciences.

Figure 3.13 Current R&D expenditure within relevant fields in total and among units evaluated. Specific field classification. Mill. NOK. 2021



Source: Statistics Norway

4. The institute sector

In this evaluation, twelve research institutes from the Norwegian institute sector are included in the analysis. The units are:

- CICERO Center for International Climate Research
- Geological Survey of Norway
- Nansen Environmental and Remote Sensing Center
- NORCE Norwegian Research Centre (Climate and Environment division)
- NORSAR
- NORSUS Norwegian Institute for Sustainability Research
- Norwegian Geotechnical Institute
- Norwegian Institute for Air Research
- SINTEF Digital
- SINTEF Industry
- The Norwegian Meteorological Institute
- The Norwegian Water Resources and Energy Directorate

In the following part of this report, the personnel statistics of these research institutes will be presented aggregated for the group of institutes (Table 4.1-4.3) and for each institute separately (Table 4.4-4.15). The presented indicators are the same as for the higher education sector, except that for the research institutes we will present the researchers in one group only, as the research institutes do not have one standard classification of positions.

4.1. R&D personnel and gender balance in the institute sector

In 2021, a total of 1,611 researchers were employed at the twelve research institutes that are included in the evaluation of natural sciences. Since 2013, the population has had a growth of about 250 researchers or 18 per cent. Most of the growth can be linked to three institutes: NORCE Norwegian Research Centre (Climate and Environment division) which had a growth of 72 per cent, Norwegian Geotechnical Institute and SINTEF Digital, both with a growth of about 40 per cent. The size of the research institutes varies quite a bit, while SINTEF Industry is by far the largest with almost 400 researchers, three of the institutes consist of around 30 or fewer researchers. The average number of researchers for the evaluated institutes is 134 researchers.

The gender balance is satisfactory among the evaluated research institutes. On average, female researchers accounted for 39 per cent in 2021, this is an increase from 34 per cent in 2013. However, the share of women varies among the institutes. The lowest share of female researchers is found at Nansen Environmental and Remote Sensing centre, where women account only for 17 per cent of the research staff. On the other hand, female researchers are in majority at three institutes: Norsus – with a share of 68 per cent, Cicero Center for International Climate Research – with a share of 56 per cent and Norwegian Institutes for Air Research where women account for 51 per cent of the researchers.

Table 4.1 Number of researchers and share of female researchers. 2013, 2017 and 2021

Research institute	Number of researchers			Share of female researchers		
	2013	2017	2021	2013	2017	2021
CICERO Center for International Climate Research	40	41	59	48	49	56
Geological Survey of Norway	140	133	123	29	33	39
Nansen Environmental and Remote Sensing Center	44	52	42	30	19	17
NORCE Norwegian Research Centre (Climate and Environment division)	85	105	146	38	36	40
NORSAR	27	26	27	19	23	30
NORSUS Norwegian Institute for Sustainability Research	19	21	25	58	52	68
Norwegian Geotechnical Institute	151	173	208	27	30	31
Norwegian Institute for Air Research	91	89	89	45	47	51
SINTEF Digital	235	216	311	18	18	25
SINTEF Industry	383	337	395	28	30	32
The Norwegian Meteorological Institute	111	134	154	32	35	36
The Norwegian Water Resources and Energy Directorate	35	39	32	40	41	47
Sum/average of the units	1,361	1,366	1,611	34	34	39

Source: Statistics Norway

Table 4.2 is showing the share of researchers with a PhD-degree and the share of researchers with a foreign PhD-degree, for each of the institutes and the average number. On average 68 per cent of the researchers are doctoral degree holders in 2021, and the intensity of PhD-degrees has increased since 2013 by 10 percentage points when 58 per cent had a PhD-degree. The table indicates that the researchers are highly qualified, but the PhD-density among the institutes varies. While three institutes have a PhD-density of 80 per cent and more, two of the institutes have a PhD-density of around 45 per cent.

Table 4.2 Share of researchers with PhD-degree and share of researchers with foreign PhD-degree. 2013, 2017, 2021.

Research institute	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
CICERO Center for International Climate Research	67	81	85	8	12	25
Geological Survey of Norway	56	63	70	35	37	41
Nansen Environmental and Remote Sensing Center	68	83	88	41	50	57
NORCE Norwegian Research Centre (Climate and Environment division)	76	79	78	38	42	44
NORSAR	59	65	63	37	46	56
NORSUS Norwegian Institute for Sustainability Research	37	48	60	11	19	24
Norwegian Geotechnical Institute	42	37	46	26	22	25
Norwegian Institute for Air Research	42	48	45	42	48	45
SINTEF Digital	54	60	61	12	18	21
SINTEF Industry	72	77	80	22	22	25
The Norwegian Meteorological Institute	60	64	68	20	23	24
The Norwegian Water Resources and Energy Directorate	57	51	72	11	13	6
Sum/average of the units	58	63	68	25	29	33

Source: Statistics Norway

As mentioned early in the report (chapter 2.1), foreign PhD-degrees are mostly foreign researchers, and this indicator is hence a measure of foreign researchers. In 2021, one-third of the researchers were holding a foreign PhD-degree and most likely they were foreign citizens. In 2013, the share of foreign PhD-degree was 25 per cent, i.e., one in four researchers were foreign citizens. There is,

however, a large variation in the share of foreign PhD-degrees among the institutes. At two institutes: Nansen Environmental and Remote Sensing Center and NORSAR, more than half (56 and 57 per cent) of the researchers were holding a foreign PhD-degree in 2021. At The Norwegian Water Resources and Energy Directorate, only six per cent have a foreign PhD-degree.

The average age of the researchers is shown in Table 4.3. The average age of the researchers at all institutes is quite similar but varies between 41.2 at Norwegian Geotechnical Institute to 50.2 years at The Norwegian Water Resources and Energy Directorate. The total average age was 44.2 in 2021, which was the same as in 2017, but an increase since 2013 when the average age was 43.3.

The table does also contain the share of researchers aged 62 years and older. Most of the researchers are younger, and only 7 per cent of the researchers are 62 years or older. At NORSAR, 11 per cent are 62 years or older, while for the rest of the institutes, less than 10 per cent are 62 years or older.

Table 4.3 Average age of researchers and share of researchers that are 62 years and older. 2013, 2017, 2021.

Research institute	Average age of researchers			Share of researchers 62 years and older		
	2013	2017	2017	2013	2017	2017
CICERO Center for International Climate Research	40.6	42.5	41.5	4	6	6
Geological Survey of Norway	46.7	48.9	46.8	16	19	9
Nansen Environmental and Remote Sensing Center	39.2	40.3	43.6	2	4	7
NORCE Norwegian Research Centre (Climate and Environment division)	42.0	43.5	42.8	5	6	2
NORSAR	48.5	46.9	42.5	19	8	11
NORSUS Norwegian Institute for Sustainability Research	43.3	42.9	43.0	0-	5	4
Norwegian Geotechnical Institute	42.0	41.5	41.2	6	8	5
Norwegian Institute for Air Research	44.3	45.5	47.3	2	3	8
SINTEF Digital	42.3	44.0	43.1	6	7	7
SINTEF Industry	43.4	44.7	44.6	6	7	9
The Norwegian Meteorological Institute	42.9	44.0	43.9	5	5	6
The Norwegian Water Resources and Energy Directorate	44.3	45.7	50.2	3	0	9
Sum/average of the units	43.3	44.2	44.2	7	7	7

Source: Statistics Norway

4.2. R&D personnel data in the institute sector per institute

In this chapter, more detailed statistics for each institute are provided in the following tables. These tables are not commented on any further.

Table 4.4 CICERO Center for International Climate Research

Indicator	2013	2017	2021
Female researchers	19	20	33
Male researchers	21	21	26
Total researchers	40	41	59
Share of female researchers	48	49	56
Share of researchers with PhD-degree	58	78	80
Share of female researchers with PhD-degree	47	75	76
Share of male researchers with PhD-degree	67	81	85
Share of researchers with foreign PhD-degree	8	12	25
Average age, all researchers	40.6	42.5	41.5
Average age, female researchers	39.5	41.6	39.2
Average age, male researchers	41.6	43.5	44.5
Share of researchers 62 years or older	4	6	6

Source: Statistics Norway

Table 4.5 Geological Survey of Norway

Indicator	2013	2017	2021
Female researchers	41	44	48
Male researchers	99	89	75
Total researchers	140	133	123
Share of female researchers	29	33	39
Share of researchers with PhD-degree	56	63	70
Share of female researchers with PhD-degree	54	68	69
Share of male researchers with PhD-degree	57	61	71
Share of researchers with foreign PhD-degree	35	37	41
Average age, all researchers	46.7	48.9	46.8
Average age, female researchers	39.4	43.0	43.3
Average age, male researchers	49.7	51.8	48.9
Share of researchers 62 years or older	16	19	9

Source: Statistics Norway

Table 4.6 Nansen Environmental and Remote Sensing Center

Indicator	2013	2017	2021
Female researchers	13	10	7
Male researchers	31	42	35
Total researchers	44	52	42
Share of female researchers	30	19	17
Share of researchers with PhD-degree	68	83	88
Share of female researchers with PhD-degree	77	90	100
Share of male researchers with PhD-degree	65	81	86
Share of researchers with foreign PhD-degree	41	50	57
Average age, all researchers	39.2	40.3	43.6
Average age, female researchers	36.4	41.6	47.0
Average age, male researchers	40.4	40.0	42.9
Share of researchers 62 years or older	2	4	7

Source: Statistics Norway

Table 4.7 NORCE Norwegian Research Centre (Climate and Environment division)

Indicator	2013	2017	2021
Female researchers	32	38	59
Male researchers	53	67	87
Total researchers	85	105	146
Share of female researchers	38	36	40
Share of researchers with PhD-degree	76	79	78
Share of female researchers with PhD-degree	75	84	83
Share of male researchers with PhD-degree	77	76	75
Share of researchers with foreign PhD-degree	38	42	44
Average age, all researchers	42.0	43.5	42.8
Average age, female researchers	37.4	39.8	40.9
Average age, male researchers	44.7	45.5	44.1
Share of researchers 62 years or older	5	6	2

Source: Statistics Norway

Table 4.8 NORSAR

Indicator	2013	2017	2021
Female researchers	5	6	8
Male researchers	22	20	19
Total researchers	27	26	27
Share of female researchers	19	23	30
Share of researchers with PhD-degree	59	65	63
Share of female researchers with PhD-degree	100	83	75
Share of male researchers with PhD-degree	50	60	58
Share of researchers with foreign PhD-degree	37	46	56
Average age, all researchers	48.5	46.9	42.5
Average age, female researchers	38.0	35.8	35.9
Average age, male researchers	50.9	50.3	45.3
Share of researchers 62 years or older	19	8	11

Source: Statistics Norway

Table 4.9 NORSUS Norwegian Institute for Sustainability Research

Indicator	2013	2017	2021
Female researchers	11	11	17
Male researchers	8	10	8
Total researchers	19	21	25
Share of female researchers	58	52	68
Share of researchers with PhD-degree	37	48	60
Share of female researchers with PhD-degree	36	55	65
Share of male researchers with PhD-degree	38	40	50
Share of researchers with foreign PhD-degree	11	19	24
Average age, all researchers	43.3	42.9	43.0
Average age, female researchers	40.3	44.2	42.1
Average age, male researchers	47.5	41.5	44.9
Share of researchers 62 years or older	0	5	4

Source: Statistics Norway

Table 4.10 Norwegian Geotechnical Institute

Indicator	2013	2017	2021
Female researchers	41	52	65
Male researchers	110	121	143
Total researchers	151	173	208
Share of female researchers	27	30	31
Share of researchers with PhD-degree	42	37	46
Share of female researchers with PhD-degree	37	35	43
Share of male researchers with PhD-degree	44	38	48
Share of researchers with foreign PhD-degree	26	22	25
Average age, all researchers	42.0	41.5	41.2
Average age, female researchers	37.0	36.9	38.0
Average age, male researchers	43.8	43.5	42.7
Share of researchers 62 years or older	6	8	5

Source: Statistics Norway

Table 4.11 Norwegian Institute for Air Research

Indicator	2013	2017	2021
Female researchers	41	42	45
Male researchers	50	47	44
Total researchers	91	89	89
Share of female researchers	45	47	51
Share of researchers with PhD-degree	68	73	71
Share of female researchers with PhD-degree	73	81	76
Share of male researchers with PhD-degree	64	66	66
Share of researchers with foreign PhD-degree	42	48	45
Average age, all researchers	44.3	45.5	47.3
Average age, female researchers	42.0	43.7	45.6
Average age, male researchers	46.3	47.1	49.0
Share of researchers 62 years or older	2	3	8

Source: Statistics Norway

Table 4.12 SINTEF Digital

Indicator	2013	2017	2021
Female researchers	43	38	79
Male researchers	192	178	232
Total researchers	235	216	311
Share of female researchers	18	18	25
Share of researchers with PhD-degree	54	60	61
Share of female researchers with PhD-degree	49	55	53
Share of male researchers with PhD-degree	56	61	63
Share of researchers with foreign PhD-degree	12	18	21
Average age, all researchers	42.3	44.0	43.1
Average age, female researchers	39.7	41.9	40.2
Average age, male researchers	42.9	44.5	44.0
Share of researchers 62 years or older	6	7	7

Source: Statistics Norway

Table 4.13 SINTEF Industry

Indicator	2013	2017	2021
Female researchers	109	100	126
Male researchers	274	237	269
Total researchers	383	337	395
Share of female researchers	28	30	32
Share of researchers with PhD-degree	72	77	80
Share of female researchers with PhD-degree	65	71	69
Share of male researchers with PhD-degree	75	79	85
Share of researchers with foreign PhD-degree	22	22	25
Average age, all researchers	43.4	44.7	44.6
Average age, female researchers	39.3	41.5	41.3
Average age, male researchers	45.0	46.0	46.1
Share of researchers 62 years or older	6	7	9

Source: Statistics Norway

Table 4.14 The Norwegian Meteorological Institute

Indicator	2013	2017	2021
Female researchers	36	47	55
Male researchers	75	87	99
Total researchers	111	134	154
Share of female researchers	32	35	36
Share of researchers with PhD-degree	60	64	68
Share of female researchers with PhD-degree	58	66	67
Share of male researchers with PhD-degree	61	63	68
Share of researchers with foreign PhD-degree	20	23	24
Average age, all researchers	42.9	44.0	43.9
Average age, female researchers	40.0	41.6	42.2
Average age, male researchers	44.3	45.3	44.8
Share of researchers 62 years or older	5	5	6

Source: Statistics Norway

Table 4.15 The Norwegian Water Resources and Energy Directorate

Indicator	2013	2017	2021
Female researchers	14	16	15
Male researchers	21	23	17
Total researchers	35	39	32
Share of female researchers	40	41	47
Share of researchers with PhD-degree	57	51	72
Share of female researchers with PhD-degree	64	50	73
Share of male researchers with PhD-degree	52	52	71
Share of researchers with foreign PhD-degree	11	13	6
Average age, all researchers	44.3	45.7	50.2
Average age, female researchers	42.7	44.8	48.0
Average age, male researchers	45.4	46.3	52.1
Share of researchers 62 years or older	3	0	9

Source: Statistics Norway

References

OECD (2015): Frascati Manual. Guidelines for Collecting and Reporting Data on Research and Experimental Development, OECD Publishing, Paris, <https://doi.org/10.1787/9789264239012-en>

The Research Council of Norway (2021): Science & Technology Indicators for Norway, The Research Council of Norway.
<https://www.forskningsradet.no/contentassets/c13c9822d47542108d768dfb4a8479c4/sti-report-2021.pdf>

Appendix A: Tables

Department of Chemical Engineering, Norwegian University of Science and Technology

Table A1 Number of researchers and share of women, by academic position in 2013, 2017 and 2021.

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	12	12	12	17	17	33
Associate professors	6	7	7	33	43	14
Researchers and postdocs	26	22	26	27	32	42
PhD-students	50	60	63	40	32	25
Total	94	101	108	33	31	30

Source: Statistics Norway

Table A2 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021.

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	25	25	17
Associate professors	100	100	100	0	29	29
Researchers and postdocs	96	100	96	35	27	35
Total	98	100	98	27	27	29

Source: Statistics Norway

Table A3 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021.

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	53.3	54.0	56.1	25	25	33	
Associate professors	44.5	45.3	46.3	0	0	14	14
Researchers and postdocs	33.1	35.9	37.1				73
PhD-students	28.3	28.0	28.7				100
Total	33.8	34.0	34.9	3	3	5	77

Source: Statistics Norway

Department of Chemistry, Norwegian University of Science and Technology

Table A4 Number of researchers and share of women, by academic position in 2013, 2017 and 2021

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	12	12	11	42	42	18
Associate professors	10	7	7	30	14	29
Researchers and postdocs	5	15	10	40	47	40
PhD-students	25	18	25	36	50	32
Total	52	52	53	37	42	30

Source: Statistics Norway

Table A5 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	91	33	25	27
Associate professors	100	100	100	40	57	57
Researchers and postdocs	100	100	100	60	67	70
Total	100	100	96	41	50	50

Source: Statistics Norway

Table A6 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	56.8	58.5	54.8	33	50	27	
Associate professors	49.4	52.3	47.3	20	14	0	
Researchers and postdocs	32.2	35.7	36.2				80
PhD-students	29.2	27.8	28.1				100
Total	39.8	40.5	37.7	12	13	6	62

Source: Statistics Norway

Department of Geoscience and Petroleum, Norwegian University of Science and Technology**Table A7 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	15	20	24	0	10	8
Associate professors	1	13	11	0	15	18
Researchers and postdocs	7	24	12	14	21	33
PhD-students	31	53	41	23	30	27
Total	54	110	88	15	23	22

Source: Statistics Norway

Table A8 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	93	100	100	33	45	50
Associate professors	100	100	100	0	15	36
Researchers and postdocs	57	88	92	29	33	58
Total	83	95	98	30	33	49

Source: Statistics Norway

Table A9 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	61.9	61.0	58.7	53	50	50	
Associate professors	66.0	49.2	46.5	100	15	0	
Researchers and postdocs	38.9	38.2	41.8	14	0	8	67
PhD-students	29.3	30.3	29.7				100
Total	40.2	39.8	41.4	19	11	15	56

Source: Statistics Norway

Department of Materials Science and Engineering, Norwegian University of Science and Technology

Table A10 Number of researchers and share of women, by academic position in 2013, 2017 and 2021

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	19	20	19	21	30	32
Associate professors	6	15	14	67	53	43
Researchers and postdocs	14	28	27	43	32	33
PhD-students	41	82	55	29	37	40
Total	80	145	115	33	37	37

Source: Statistics Norway

Table A11 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	21	25	26
Associate professors	100	100	86	33	27	21
Researchers and postdocs	93	96	78	43	57	37
Total	97	98	87	31	40	30

Source: Statistics Norway

Table A12 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	55.3	55.8	54.1	21	25	26	
Associate professors	37.7	42.9	42.9				7
Researchers and postdocs	31.3	32.9	35.3	0	0	4	85
PhD-students	28.0	28.1	28.5				100
Total	35.8	34.4	36.1	5	3	5	69

Source: Statistics Norway

Department of Physics, Norwegian University of Science and Technology

Table A13 Number of researchers and share of women, by academic position in 2013, 2017 and 2021

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	24	24	29	17	17	24
Associate professors	13	10	16	23	30	31
Researchers and postdocs	20	24	22	40	33	32
PhD-students	56	62	59	27	26	34
Total	113	120	126	27	26	31

Source: Statistics Norway

Table A14 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	92	100	100	42	50	45
Associate professors	100	100	100	38	40	50
Researchers and postdocs	95	100	100	70	83	73
Total	95	100	100	51	62	55

Source: Statistics Norway

Table A15 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	54.3	54.6	54.1	21	29	21	
Associated professors	40.0	42.9	47.4	0	0	6	6
Researchers and postdocs	34.1	34.3	35.8				77
PhDs-students	27.5	27.6	28.0				100
Total	35.8	35.6	37.8	4	6	6	61

Source: Statistics Norway

Department of Chemistry, UiT The Arctic University of Norway**Table A16 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	7	8	12	0	0	17
Associate professors	5	5	1	20	20	0
Researchers and postdocs	31	33	25	29	33	32
PhD-students	24	23	36	38	52	44
Total	67	69	74	28	35	35

Source: Statistics Norway

Table A17 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	57	88	92	14	25	33
Associate professors	80	80	100	40	40	100
Researchers and postdocs	97	94	92	52	39	28
Total	88	91	92	44	37	32

Source: Statistics Norway

Table A18 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	52.0	54.4	53.8	14	0	33	
Associate professors	43.6	47.6	40.0	20	20	0	
Researchers and postdocs	37.5	38.5	39.8	0	0	4	44
PhD-students	29.2	30.2	29.0				100
Total	36.5	38.3	36.8	3	1	7	64

Source: Statistics Norway

Department of Earth sciences, UiT The Arctic University of Norway**Table A19 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	4	11	14	50	18	29
Associate professors	2	3	6	0	67	83
Researchers and postdocs	17	24	22	59	58	36
PhD-students	13	27	29	46	48	55
Total	36	65	71	50	48	46

Source: Statistics Norway

Table A20 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	50	55	57
Associate professors	50	100	100	0	33	50
Researchers and postdocs	94	100	91	35	67	36
Total	91	100	95	35	61	45

Source: Statistics Norway

Table A21 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	57.5	54.6	56.1	0	27	36	
Associate professors	60.0	33.7	38.8	50	0	0	17
Researchers and postdocs	38.6	37.0	35.2				68
PhD-students	29.1	30.2	31.2				100
Total	38.4	37.0	38.0	3	5	7	63

Source: Statistics Norway

Department of Physics and Technology, UiT The Arctic University of Norway**Table A22 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	10	11	15	30	36	20
Associate professors	2	3	8	50	0	25
Researchers and postdocs	8	19	37	13	47	30
PhD-students	21	31	46	29	29	33
Total	41	64	106	27	34	29

Source: Statistics Norway

Table A23 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	40	45	40
Associate professors	100	100	88	0	33	38
Researchers and postdocs	88	95	92	63	58	62
Total	95	97	93	45	52	53

Source: Statistics Norway

Table A24 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	52.4	53.4	55.1	20	27	27	
Associate professors	37.5	40.7	39.3				
Researchers and postdocs	39.5	35.2	34.4				73
PhD-students	30.1	29.1	30.0				100
Total	37.8	35.6	35.8	5	5	4	69

Source: Statistics Norway

UNIS - The university centre in Svalbard**Table A25 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	8	11	13	25	9	31
Associate professors	13	15	12	54	60	58
Researchers and postdocs	15	9	16	60	56	56
PhD-students	17	18	19	59	61	42
Total	53	53	60	53	49	47

Source: Statistics Norway

Table A26 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	75	100	100	38	36	54
Associate professors	92	100	83	38	53	42
Researchers and postdocs	93	89	88	47	33	44
Total	60	64	62	28	28	32

Source: Statistics Norway

Table A27 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	53.8	53.1	55.5	13	9	8	
Associate professors	46.5	44.7	43.7	8	7	0	
Researchers and postdocs	36.2	35.0	34.7				
PhD-students	29.2	31.1	28.2				
Total	39.1	40.2	38.8	4	4	2	0

Source: Statistics Norway

Department of Chemistry, University of Bergen**Table A28 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	12	13	15	8	15	20
Associate professors	11	12	10	18	25	30
Researchers and postdocs	3	13	10	33	8	20
PhD-students	22	21	23	45	52	43
Total	48	59	58	29	29	31

Source: Statistics Norway

Table A29 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	83	100	100	17	31	33
Associate professors	91	92	90	9	33	40
Researchers and postdocs	100	100	100	33	46	50
Total	88	97	97	15	37	40

Source: Statistics Norway

Table A30 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Academic positions							
Professors	55.8	56.8	58.0	33	31	40	
Associate professors	45.1	45.1	48.4				10
Researchers and postdocs	34.0	35.1	37.6				80
PhD-students	28.9	29.7	29.4				100
Total	39.6	40.0	41.5	8	7	10	55

Source: Statistics Norway

Department of Earth Science, University of Bergen**Table A31 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	23	25	25	9	12	12
Associate professors	11	10	14	36	50	21
Researchers and postdocs	26	43	31	38	35	29
PhD-students	29	46	42	41	35	43
Total	89	124	112	31	31	29

Source: Statistics Norway

Table A32 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	96	100	100	30	28	28
Associate professors	100	100	100	36	50	50
Researchers and postdocs	88	95	97	62	58	52
Total	93	97	99	45	47	43

Source: Statistics Norway

Table A33 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position

	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Academic positions							
Professors	55.2	55.0	57.4	17	20	40	
Associate professors	42.4	45.6	45.2	0	0	7	
Researchers and postdocs	35.3	36.2	35.9				74
PhD-students	28.2	29.5	29.0				100
Total	39.0	38.2	39.3	4	4	10	58

Source: Statistics Norway

Department of Physics and Technology, University of Bergen**Table A34 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	24	24	23	13	13	13
Associate professors	6	8	11	17	13	18
Researchers and postdocs	23	26	31	30	23	23
PhD-students	34	26	46	32	35	33
Total	87	84	111	25	23	24

Source: Statistics Norway

Table A35 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	92	96	100	29	42	35
Associate professors	83	100	100	17	38	18
Researchers and postdocs	83	96	100	35	38	52
Total	87	97	100	30	40	40

Source: Statistics Norway

Table A36 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	52.2	53.6	56.4	13	29	30	
Associate professors	51.3	48.0	47.7	17	0	9	
Researchers and postdocs	34.5	34.3	35.7				55
PhD-students	29.3	28.5	29.2				100
Total	38.5	39.3	38.5	5	8	7	57

Source: Statistics Norway

Geophysical Institute, University of Bergen

Table A37 Number of researchers and share of women, by academic position in 2013, 2017 and 2021

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	11	15	18	9	0	6
Associate professors	7	3	6	14	33	50
Researchers and postdocs	17	30	37	53	37	49
PhD-students	17	26	31	59	54	55
Total	52	74	92	40	35	42

Source: Statistics Norway

Table A38 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	91	100	100	45	40	50
Associate professors	100	100	83	29	33	0
Researchers and postdocs	100	100	81	65	77	51
Total	97	100	87	51	63	46

Source: Statistics Norway

Table A39 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	51.5	52.7	52.3	18	20	22	
Associate professors	46.3	50.7	44.5	14	33	17	17
Researchers and postdocs	35.2	36.5	35.9	0	3	0	70
PhD-students	29.0	28.5	28.8				100
Total	38.1	37.6	37.3	6	7	5	63

Source: Statistics Norway

Department of Chemistry, University of Oslo**Table A40 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	26	24	21	27	25	24
Associate professors	7	7	9	0	0	22
Researchers and postdocs	23	15	14	22	27	7
PhD-students	47	28	41	34	36	46
Total	103	74	85	27	27	32

Source: Statistics Norway

Table A41 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	88	96	95	27	29	33
Associate professors	71	100	89	14	86	56
Researchers and postdocs	100	100	100	78	53	79
Total	91	98	95	46	46	52

Source: Statistics Norway

Table A42 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	57.5	58.6	57.0	31	50	38	
Associate professors	40.3	43.9	43.2				
Researchers and postdocs	34.3	34.5	36.2				50
PhD-students	28.6	28.3	28.8				100
Total	38.0	40.9	38.5	8	16	9	56

Source: Statistics Norway

Department of Earth sciences, University of Oslo**Table A43 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	34	35	31	21	26	35
Associate professors	8	10	8	13	20	38
Researchers and postdocs	40	69	71	33	29	41
PhD-students	37	54	52	46	35	50
Total	119	168	162	32	30	43

Source: Statistics Norway

Table A44 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	97	97	97	38	40	45
Associate professors	88	100	100	38	50	38
Researchers and postdocs	83	93	99	63	64	72
Total	89	95	98	50	55	62

Source: Statistics Norway

Table A45 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Academic positions							
Professors	57.1	58.1	56.0	35	37	23	
Associate professors	47.9	45.2	43.3	13	0	0	13
Researchers and postdocs	34.7	34.3	37.1	0	0	1	58
PhD-students	29.1	29.5	30.0				100
Total	40.3	38.4	38.8	11	8	5	58

Source: Statistics Norway

Department of Physics, University of Oslo**Table A46 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	39	33	34	13	21	21
Associate professors	11	13	7	18	23	57
Researchers and postdocs	40	35	40	35	23	23
PhD-students	50	62	47	28	26	49
Total	140	143	128	25	24	34

Source: Statistics Norway

Table A47 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	90	97	100	26	30	32
Associate professors	100	100	100	9	23	14
Researchers and postdocs	85	97	90	33	40	48
Total	89	98	95	27	33	38

Source: Statistics Norway

Table A48 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position. in 2013, 2017 and 2021

	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Academic positions							
Professors	56.3	54.4	52.8	36	21	15	3
Associate professors	42.3	47.3	47.7	9	23	14	
Researchers and postdocs	35.4	36.2	36.4	0	0	3	58
PhD-students	28.4	29.6	28.9				100
Total	39.2	38.5	38.6	11	7	5	55

Source: Statistics Norway

Institute of Theoretical Astrophysics, University of Oslo**Table A49 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Academic positions						
Professors	6	7	9	0	0	11
Associate professors	2	2	4	0	50	50
Researchers and postdocs	17	17	19	24	41	21
PhD-students	12	12	32	42	17	28
Total	37	38	64	24	26	25

Source: Statistics Norway

Table A50 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	67	57	56
Associate professors	100	100	100	100	100	75
Researchers and postdocs	94	100	100	82	94	74
Total	96	100	100	80	85	69

Source: Statistics Norway

Table A51 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position in 2013, 2017 and 2021

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	44.5	47.6	50.3	0	0	22	
Associate professors	40.0	40.0	37.8				
Researchers and postdocs	33.7	36.5	33.5				89
PhD-students	28.6	29.1	28.3				100
Total	34.1	36.4	33.5	0	0	3	77

Source: Statistics Norway

Department of Energy Resources, University of Stavanger**Table A52 Number of researchers and share of women, by academic position in 2013, 2017 and 2021**

Academic positions	Number of researchers			Share of women		
	2013	2017	2021	2013	2017	2021
Professors	12	12	12	17	17	33
Associate professors	6	7	7	33	43	14
Researchers and postdocs	26	22	26	27	32	42
PhD-students	50	60	63	40	32	25
Total	94	101	108	33	31	30

Source: Statistics Norway

Table A53 Share of researchers with PhD-degrees and share of foreign PhD-degree, by academic position in 2013, 2017 and 2021 in 2013, 2017 and 2021

Academic positions	Share of researchers with PhD-degree			Share of researchers with foreign PhD-degree		
	2013	2017	2021	2013	2017	2021
Professors	100	100	100	25	25	17
Associate professors	100	100	100	0	29	29
Researchers and postdocs	96	100	96	35	27	35
Total	98	100	98	27	27	29

Source: Statistics Norway

Table A54 Average age and share of researchers aged 62 years and older, by academic position and share with temporary position

Academic positions	Average age			Share of researchers 62 years or older			Share with temporary position
	2013	2017	2021	2013	2017	2021	2021
Professors	53.3	54.0	56.1	25	25	33	
Associate professors	44.5	45.3	46.3	0	0	14	14
Researchers and postdocs	33.1	35.9	37.1				73
PhD-students	28.3	28.0	28.7				100
Total	33.8	34.0	34.9	3	3	5	77

Source: Statistics Norway

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