

# Research Evaluation at Faculty of Natural Sciences, Aarhus University

## **BACKGROUND INFORMATION FOR PANEL MEMBERS**

This document contains background information about Aarhus University and is a supplement to the self-evaluation report from the department

29/2 2024



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## AARHUS UNIVERSITY IN BRIEF

Aarhus University is an academically diverse and research-intensive university with five faculties: Arts, Aarhus BSS, Health, Natural Sciences and Technical Sciences. Established in 1928, today the university has a solid platform and strong impact, both in Denmark and internationally. The [university ranks as number 78](#) in the latest edition of the Shanghai rankings.

The university has 34,000 bachelor’s, Master’s and PhD students, 8,500 employees and a total income of € 982 million in 2022.

Read more [about the university](#) and the [current strategy](#) for the university.

The university has five faculties and 32 departments, see table below:

Faculty of Arts	Aarhus BSS	Faculty of Health	Faculty of Natural Sciences	Faculty of Technical Sciences
SCHOOL OF COMMUNICATION AND CULTURE	DEPARTMENT OF PSYCHOLOGY AND BEHAVIORAL SCIENCES	DEPARTMENT OF FORENSIC MEDICINE	DEPARTMENT OF MOLECULAR BIOLOGY AND GENETICS	DEPARTMENT OF ENVIRONMENTAL SCIENCE
DANISH SCHOOL OF EDUCATION	DEPARTMENT OF POLITICAL SCIENCE	DEPARTMENT OF DENTISTRY AND ORAL HEALTH	DEPARTMENT OF MATHEMATICS	DEPARTMENT OF ANIMAL SCIENCE
SCHOOL OF CULTURE AND SOCIETY	DEPARTMENT OF MANAGEMENT	DEPARTMENT OF CLINICAL MEDICINE	DEPARTMENT OF CHEMISTRY	DEPARTMENT OF FOOD SCIENCE
	DEPARTMENT OF LAW	DEPARTMENT OF PUBLIC HEALTH	DEPARTMENT OF GEOSCIENCE	DEPARTMENT OF AGROECOLOGY
	DEPARTMENT OF ECONOMICS AND BUSINESS ECONOMICS	DEPARTMENT OF BIOMEDICINE	DEPARTMENT OF PHYSICS AND ASTRONOMY	DEPARTMENT OF BIOSCIENCE
	DEPARTMENT OF BUSINESS DEVELOPMENT AND TECHNOLOGY		DEPARTMENT OF COMPUTER SCIENCE	DEPARTMENT OF BIOLOGICAL AND CHEMICAL ENGINEERING
			DEPARTMENT OF BIOLOGY	DEPARTMENT OF CIVIL AND ARCHITECTURAL ENGINEERING
			INANO	DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
				DEPARTMENT OF MECHANICAL AND PRODUCTION ENGINEERING
				CENTER FOR QUANTITATIVE GENETICS AND GENOMICS
				DCA - DANISH CENTRE FOR FOOD AND AGRICULTURE
				DCE - DANISH CENTRE FOR ENVIRONMENT AND ENERGY

## GOVERNANCE STRUCTURE AT AARHUS UNIVERSITY

The Danish universities are self-governing, public institutions. This means, that the universities are subject to follow state regulation and receive a large part of their funding from the Danish government.

The objectives of the universities are to conduct research, provide tertiary education of the highest academic standard and disseminate information about scientific methods and research results. The 2003 University Act puts emphasis on the universities' obligation to disseminate knowledge, also known as the 'third pillar'. Thus, the universities are encouraged



to exchange knowledge and competencies with society, including the business sector, engage in public debate and sustain relations with other institutions of higher education.

[The Board of the University](#) is the highest authority at Aarhus University. The Board is composed of a majority of six external members as well as two members representing the academic staff, one member representing the technical and administrative staff and two students. The external members are appointed by the Minister on the merit of their personal qualifications. The representatives of students and staff are elected by their respective peers. One of the external members is elected chair of the Board.

The University reports to the Ministry of Higher Education and Science with which the Board of the University has entered into a [Strategic Framework Contract](#) that explicates the University's objectives and intended progress for a fixed period.

Rector and Pro-rector are appointed by the Board to head the daily management of the University. Rector recommends budget and accounts to the Board. At Aarhus University, Rector has set up the [Senior University Management Team](#), which includes Rector, Pro-rector, the University Director, the Director of Enterprise and Innovation and the five Deans. The University Management Team is the executive academic managing team at the University.

Deans are appointed by Rector to head the five faculties. Rector has delegated several responsibilities to the deans, e.g.:

- budget and spending
- strategy formulation and implementation for research, education, talent development, advice and industry collaboration
- appointment and dismissal of Heads of Department
- set up the necessary number of study boards to safeguard student influence on education and teaching, and approve the chairperson and deputy chairperson of each study board
- organizing and managing the faculty graduate school (PhD school).

## AN OVERVIEW OF THE FACULTY OF NATURAL SCIENCES

From the 1<sup>st</sup> of January 2020, the Faculty of Natural Sciences was re-established as a faculty at Aarhus University after having been part of the Faculty of Science and Technology for nine years. From 1954 and up until 2011, the Faculty of Natural Science existed as one of the faculties at Aarhus University. As of 1<sup>st</sup> January 2020, the former Faculty of Science and Technology was split in two faculties: [The Faculty of Technical Sciences](#) and the [Faculty of Natural Sciences](#)

### **Strategy and core narrative for Natural Sciences**

The faculty's strategic direction is based on [AU's strategy for the period 2020-2025](#), and it comprises a core narrative describing Natural Sciences' identity as a faculty, as well as four strategic focus areas.

According to the strategy, the overall vision for the Faculty of Natural Sciences is: "*The Faculty of Natural Sciences wants to establish the best environment for excellence within research and education to develop new insights, new technologies and new graduates and thereby help solve the challenges facing society*".



The strategic milestones give the faculty a clear direction in its work to generate new knowledge and new research breakthroughs, and to help solve current societal challenges through high-quality research and education. The four strategic milestones are:

- Collaboration and management
- Career development
- Recruitment
- Internationalization

In our core narrative, we describe our identity in this way: *“The Faculty of Natural Sciences is thus based on basic research, the pursuit of excellence, curiosity and focus on contributing talented graduates and research-based solutions to societal challenges. The pioneering spirit characterises Natural Sciences: We have a strong and ambitious community in which talented students can become an active part of laboratory research, fieldwork and the development of theoretical subjects.*

*We have a flat structure, high ambitions and a strong international orientation. At the Faculty, we strive to be among the best in the world, and we know that great results are created by exceptional and ambitious researchers. We are proud to have a vibrant and collaborative study and research environment, and behind every major result is important collaboration between researchers, students, technicians and administrative staff”.*

The faculty's strengths as highlighted in the core narrative are the faculty's good research activities, the flat hierarchy, interdisciplinary research, good collaboration across departments and faculties, basic research of the highest quality, high-quality study programs, students' opportunities to get involved in research, and much more.

Read the [strategy of the faculty](#) and [core narrative](#).

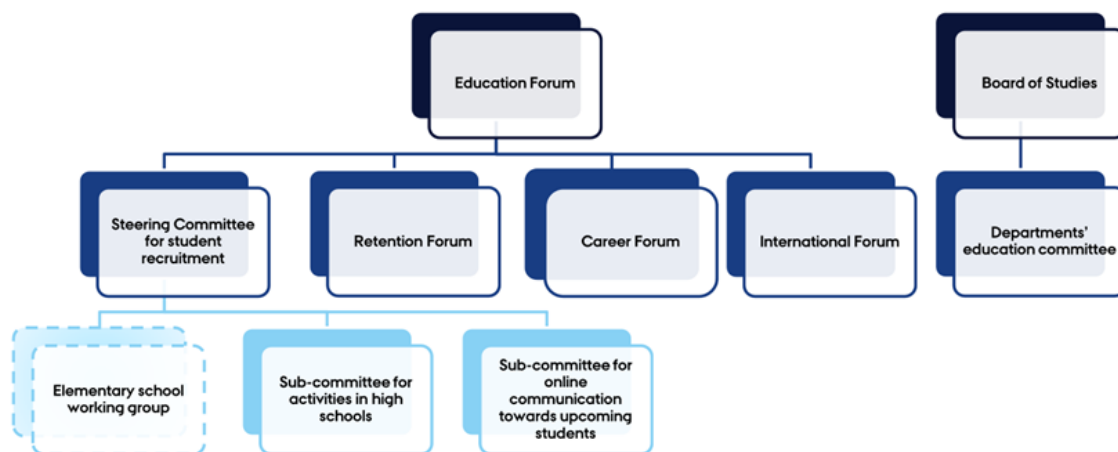
### **Organisation**

At the Faculty of Natural Sciences, the Dean has set up the Faculty Management Team, which includes the Dean, the three vice Deans for Education, Research and Career Development, the Head of Administration and the Heads of Department. The Faculty Management Team is the key managing team of the faculty.

To bring support the core activities initiatives at the Faculty, a committee for Research and an Education Forum have been established at faculty level as well as at departmental level.

The committees serve to engage the scientific staff, and they enable exchange of experience between the different organizational levels, as well as in interaction with the Committee for Research and the Education Committee, both at university level. To secure coordination, the chairperson of the department committees represent the department in the faculty committees. The chairperson of the faculty committees are the vice deans for Education and Research, respectively, who represent the faculty in the university committees.

In addition to the Education Forum a number of other committees have been set up at faculty level to implement strategic initiatives across the faculty. These committees facilitate sharing of experiences and knowledge and are responsible for drafting proposals for initiatives to the Educational Forum and the Faculty Management.



The [Academic Council](#) makes recommendations to the Dean in relation to internal allocation of funds and key strategic research areas. The council awards PhD degrees at the faculty and they recommend to the Dean the composition of expert committees to assess applicants for scientific positions. The council is composed of representatives from the academic staff, and representatives of the student body, who are elected by their respective peers as well as representatives of the administrative staff who participate as observers.

While the Academic Council operates at faculty level, the departments have local departmental councils. Employee issues are handled in the Faculty Liaison Committee, and local liaison committees, and working environment issues are handled in the Occupational Health and Safety Committee, and local occupational health and safety committees.

Research and teaching activities are undertaken by the departments. The Head of Department is appointed by the Dean and runs the department. The Head of Department, who must be an acknowledged researcher experienced in teaching, has the following responsibilities:

- responsibility for formulating and implementing the strategy at the department based on the strategies at faculty and university level
- to undertake day-to-day management of the department, including planning and assignment of tasks
- hiring faculty and administrative staff and the department. Hiring decisions about permanent faculty positions are set for approval by the Dean
- to ensure quality and coherence in research and teaching undertaken by the department
- to follow-up on evaluations of the study programmes in consultation with the Study Board and the Head of Studies
- responsibility for external research funding activities
- to set up an organisation that capably undertakes the relevant academic activities

### **Graduate School of Natural Sciences**

The PhD education at Natural Sciences is organised within the framework of the [Graduate School of Natural Sciences \(GSNS\)](#). The head of the PhD school is the vice-dean for Career Development and responsible for the organisation of PhD studies within the [legal framework](#) and the GSNS Rules and Regulations. The GSNS Secretariat is responsible for administration of its PhD programmes and provides a range of services, for example: application procedures, enrolment and employment, study permits for international PhD students,



evaluations, transferable skills courses, defence of PhD dissertations, issuing PhD certificates, maternity/paternity/sick leave, etc.

GSNS also handles the admission process. Based on input from the eight programme committees (one for each department and iNANO), the GSNS Admission Committee prepares a list of applicants recommended for admission to GSNS PhD studies and for full or partial funding by GSNS. This list is forwarded to the dean for approval with respect to the amount of funding from the Faculty.

### **Administrative support**

The faculty's activities are coordinated by the Dean's Office and supported by the Administrative Centre at faculty level, in collaboration with the university's Central Administration and the local secretariats of the departments and centres.

The central administration takes care of back office functions across all five faculties at Aarhus University in the areas buildings, finance, HE, IT research support and student administration. In addition to this, two other units are anchored at the university level. Firstly the [Centre for Educational Development \(CED\)](#). CED offers AU's academic environments across all faculties a qualified partnership and a range of courses in teaching and competency development. Secondly the unit "[Enterprise and Innovation](#)" supports the research environments in collaboration with industry; including a business development unit aimed at scientists who will develop a research idea into a company. This unit is also responsible for "[the Kitchen](#)" where students and researchers can get assistance to establish their own start-ups. The Kitchen offers advise on developing the idea, helps attract funding, arrange workshops and has office space for start ups.

The faculty has an administrative center in common with the Faculty of Technical Sciences. The administrative center has specialist functions in HR, IT, study administration, PhD administration and building/facility management. The center has implemented a partner model, where employees in the different areas are dedicated to specific departments to build up knowledge about specific areas and needs. Having an administrative center also provides economies of scale and is more efficient than having the functions at individual departments

Finally, the third level of administration is the department level where operational tasks are handled as well as coordination with the AU- and faculty level units.

### **Outreach activities**

The Faculty of Natural Sciences has a strong tradition for outreach activities. The Science Museums consists of the Steno Museum, the Greenhouse and the Botanical Garden and also the Ole Rømer Observatorium

The Steno Museum focuses on the history of science and medicine. Named after Nicolaus Steno, a famous Danish scientist, it houses exhibitions on the development of science, anatomy, and the history of medicine. Visitors can explore scientific instruments, historical medical equipment, and interactive displays showcasing various scientific discoveries. The Botanical Garden is a living collection of plants from various climates and regions around the world. It serves as an educational resource for botany enthusiasts and researchers, offering insight into plant diversity and conservation. The Ole Rømer Observatorium is an astronomical observatory that contributes significantly to research, education, and public outreach in astronomy and astrophysics. It was renovated in 2022-23 and now also includes five "science cabins" where school classes can stay overnight and explore the stars.



In total, the number of visitors to the Science Museums is approximately 300.000 per year.

Another successful outreach initiative is the Public Lectures in Natural Science. Every semester six lectures are offered to the audience in the Lake Side Auditorium; the largest auditorium at the university (800 seats). In addition, the lectures are live streamed to almost 400 locations around the country (cinemas, schools, upper secondary schools, libraries etc). This means, that in total, every lecture has an audience of up to 15.000 participants (!). See more at <https://ofn.au.dk/> (only in Danish)

Finally, the publisher [Aarhus University Press](#) publishes a number of book series; including the very popular Reflections, which is a series with short books about a narrowly defined subject (eg. Water, the Universe, Time etc). These books are regularly on the Danish bestseller list. Recently the publisher also launched a new book series dedicated to natural science, called Science Faction. The two first books in the series are about cells and artificial intelligence.

In addition to this, we have a number of local outreach activities anchored at the department level.

### **Interdisciplinary centres**

The faculty hosts a large number of research centers at the departments. In addition to these centres, we highlight some of the centers below, which go across faculty borders.

#### Thematic centres

Together with Faculty of Technical Sciences, we have established eight [interdisciplinary thematic research centres](#) that make targeted efforts to contribute to solving the major societal challenges of our time. The centres carry out work in a number of important areas, cutting across traditional subject boundaries, where there is a potential for developing research activities that can achieve a leading position nationally and be strongly positioned internationally.

The centres bring together researchers and students from different disciplines, creating synergies between the departments and the two new faculties. The centers make use of the unique opportunities that exist in the interaction between classical science, sector-oriented research and engineering activities. At the same time, the centers provide an access point for industrial partners and the business sector, both nationally and internationally. Through collaboration on joint research projects, the centers focus on developing research-based technologies and solutions to societal challenges.

- [CBIO - Aarhus University Centre for Circular Bioeconomy](#)
- [DIGIT - Aarhus University Centre for Digitalisation, Big Data and Data Analytics](#)
- [iCLIMATE - Aarhus University Interdisciplinary Centre for Climate Change](#)
- [iFOOD - Aarhus University Centre for Innovative Food Research](#)
- [iMAT - Aarhus University Centre for Integrated Materials Research](#)
- [WATEC - Aarhus University Centre for Water Technology](#)
- [ARC - Arctic Research Centre](#)
- [SpaCe - Aarhus Space Center](#)

#### Other large interdisciplinary centres across faculties

[DANDRITE](#) (Danish Research Institute of Translational Neuroscience) was established in 2013 as a centre across the Faculty of Natural Sciences and the Faculty of Health and performs basic and translational research in the brain and the nervous system. DANDRITE is the Danish Node of the Nordic EMBL Partnership in Molecular Medicine and the centre has been funded with grants from Lundbeckfonden (app 27 mio. EUR).





DANDRITE has attracted a number of talented young scientists using the EMBL group leader model. Three of these have been awarded an ERC Starting Grant.

DANDRITE is hosted by Aarhus University, where DANDRITE is organizationally placed in two departments: the Department of Biomedicine (Faculty of Health) and the Department of Molecular Biology and Genetics (Faculty of Natural Sciences).

[CORC](#) (The Novo Nordisk Foundation CO<sub>2</sub> Research Center) was established in 2022 and is a centre across research groups at the Faculty of Natural Sciences and the Faculty of Technical Sciences. CORC is a mission-oriented center with the purpose to develop novel science for CO<sub>2</sub> capture and CO<sub>2</sub> conversions for storage or utilization to replace fossil carbon and fossil fuel-intensive processes with sustainable, CO<sub>2</sub>-based technologies. The centre was established with an initial grant of 85 mio. EUR from the Novo Nordisk Foundation.

The Novo Nordisk Foundation CO<sub>2</sub> Research Center is based with its hub at Aarhus University and satellite institutions at the University of Copenhagen, Technical University of Denmark, Stanford University and Eberhard Karls University of Tübingen. The ambition is to be recognized among the top three international science and technology centers for mitigating CO<sub>2</sub>-based climate change. The CO<sub>2</sub> research center pursues distinctively collaborative approaches between the chemical and life sciences. The

[Center for Computational Thinking and Design \(CCTD\)](#) was founded in 2018 and is an interdisciplinary center with participation from Natural Sciences and the Faculty of Arts. The aim of the centre is to set the agenda for international research and to develop research-based education with an emphasis on digital technology (TechEd) to strengthen citizens' digital competences and their democratic participation in a digitalized society.

The CCTD vision is to give citizens, particularly children and youth equal opportunity to acquire competences to construct and reflect on digital technology – in relation to their own life, their community engagement and society in general.

Another purpose of CCTD is to build educational capacity for technology comprehension at all levels of education through education of PhDs, research-based educational content and tools to pre-service and in-service training programs for educators (K-12) and by offering consultancy to educational institutions.

CCTD is a part of a new Knowledge Center for Digital Technology Comprehension established with the University of Copenhagen, University College Copenhagen and the University College Aarhus and has attracted a grant of 7 mio. EUR from three private Danish Foundations.

In 2023, the Faculty of Natural Sciences established the initiative [Quantum Campus Aarhus](#). At the faculty, there is a strong tradition for research within a broad range of quantum technologies. In Quantum Campus Aarhus, we now unite several departments across the Faculties of Natural Sciences, Technical Sciences and Health contributing prominently to the development and application of quantum technologies. The activities in Quantum Campus Aarhus will enable the green and digital transition, predict future drugs and materials, and educate and train tomorrow's quantum specialist.



## Key figures for Natural Sciences

Key figures for the Faculty of Natural Sciences (2022 figures)	
Income:	€ 187 million
Academic staff (full-time equivalent):	626
Student FTEs for ordinary education:	2706
Number of PhD students:	414

## THE DANISH JOB MARKET AND THE ACADEMIC JOB STRUCTURE

The job market in Denmark is primarily regulated by collective agreements between the various unions and the Ministry of Finance. Collective agreements stipulate the rights and obligations of employees regarding such conditions as wages, pension scheme conditions, working hours, notice of terminations and holidays. The collective agreements are a supplement to the generally applicable Danish labour market legislation. The job structure at Aarhus University follows legislated "Job Structure for Academic Staff at Universities".

As many other places of employment in Denmark, Aarhus University has a staff development dialogue (SDD) concept<sup>1</sup>, which is an annual dialogue between managers and individual staff members, where the focus is on the staff member's daily working life, goals, tasks, well-being, cooperative relations and professional and personal development. The dialogue thus links the employee's professional and personal competence development with the development of the workplace. According to Aarhus University's personnel policy, the SDD dialogue must support competence development that helps guarantee the employee good job prospects in the labour market both at the university and outside the university.

The most common Danish academic job titles are *PhD*, *postdoc*, *adjunct (assistant professor)*, *lector (associate professor)*, *professor*.

**PHD:** In Denmark, and hence also at GSNS, the total time of university studies leading to a PhD degree is 8 years (480 ECTS).

Admission to the PhD studies at the GSNS is based on either: a two year (120 ECTS) Master's degree on top of a three year (180 ECTS) Bachelor's degree, in which case the student is admitted for a PhD programme of study only (180 ECTS) *or* a three year (180 ECTS) Bachelor's degree, in which case the student is admitted in parallel to a combined Master's/PhD programme of study. In both cases, a student may be admitted with transfer of credits based on individual assessment.

In Denmark, it is required that the PhD programme includes courses, international mobility, and dissemination/communication activities. For PhD students admitted on top of a Master's degree these activities totaling 1 year/60 ECTS.

Admission on top of a 3-year Bachelor's degree is in a 5-year study programme. If the student does not have a Master's degree prior to admission, the PhD student is also initially admitted for a Master's degree with an individual programme of study designed as an integral part of the following 5 years of study. The first years of study in the 5-year programme is a combined Master's/PhD study.

<sup>1</sup> In Danish: "Medarbejder Udviklingssamtale (MUS)"



**Postdoc:** Postdoc positions are for a large part advertised in open calls with shortlisting as part of the assessment. Candidates with a personal (named) grant from councils, foundations or external non-government funders may be employed without advertisement, and there must be a positive academic assessment. Natural Sciences wishes to recruit young talents from all over the world, and supports this with targeted initiatives like the Marie Curie Masterclass. PhDs from Aarhus are strongly recommended to do their postdoc abroad.

**Adjunkt** (English equivalent: *Assistant professor*) must do research and research based teaching. We strive to recruit and employ the most talented assistant professors in assistant professor tenure track positions. See below for description of the tenure track policy at Natural Sciences.

**Lektor** is a permanent position considered equivalent to *associate professor*. They are responsible for research and research-based teaching. The majority of the tenured staff members of the university are associate professors.

**Professors** at Aarhus University are appointed after open, international calls. See more about [the principles for appointments to professorships at the Faculty of Natural Sciences](#).

## RECRUITMENT AND CAREER DEVELOPMENT AT THE FACULTY

### **Norms for appointing permanent academic staff**

In the beginning of 2018, the senior management team at Aarhus University [approved a set of norms for appointing academic staff to permanent positions](#). The norms were introduced to help improve the quality and diversity of the fields of applicants to positions at all five faculties and they set out a common framework without imposing inflexible rules. The norms address the use of search committees, re-advertisement, assessment committees, research abroad, and appointment committees. The recruitment of academic staff is inextricably linked to the strategies for academic development at the faculties and departments/schools. The seven norms should be understood as a tool to aid in the development of good recruitment practices.

In addition to these norms, the faculty has formulated a [set of criteria for evaluating candidates for scientific positions](#).

### **More women in research**

The Faculty of Natural Sciences strives to be a diverse, inclusive workplace where all employees – regardless of gender, age, nationality, ethnicity, religion, sexual orientation or handicap – have equal rights and opportunities in their work and career paths. We consider staff diversity to be a resource and we want to encourage a workplace culture that allows all employees to express and develop their talents in in work life. However, the gender balance is challenged at many of the departments of the university. As part of its [Strategy 2025](#), Aarhus University has adopted its most recent [Action Plan for gender equality, diversity and inclusion 2023-25](#) in order to make a sustained and focused effort to create genuinely inclusive working environments

For the period 2023-25, the AU senior management has decided to pay special attention to the following four cross-university activities: 1) Systematised work with search committees; 2) Systematic career dialogues; 3) Leading inclusive dialogues and decision-making processes; and 4) Inclusive workplace culture. Additionally, each faculty has designed a local activity, which for the Faculty of Natural Sciences concerns parental leave packages for scientific staff. As a first step, scientific employees going on parental leave (for at least two



consecutive months) should be offered parental leave dialogues. These dialogues can establish matching of expectations and ensure that employees can take parental leave without worrying about whether leave has a negative impact on career.

### **Tenure track**

In order to recruit and offer attractive career paths to the most talented junior researchers, the Faculty of Natural Sciences has decided that the recruitment of junior researchers may take place through a [tenure track programme](#). In the tenure track programme, highly qualified candidates are employed at assistant professor/researcher level for a six-year period with advancement to associate professor/senior researcher level, under the assumption that there will be a positive evaluation at the end of the tenure track programme. The advancement is dependent on the tenure track candidate's own results and the associate professor/senior researcher position is not advertised at the end of the tenure programme. The goal of the programme is to attract and retain highly qualified, promising talents from all over the world, to promote the academic development and independence of researchers at an early stage of their career and to create transparency in the academic career process.

### **Sabbatical leave**

Long-term stays at leading foreign universities and research institutions are important in order to strengthen networks and international collaborations and to give the researchers time for immersion, inspiration, further professional growth and development. Therefore the faculty wishes to support tenured academic staff in going abroad for sabbatical leaves.

### **Professor promotion program**

In 2022, the Faculty of Natural Sciences launched the faculty's [programme for promotion to professor](#). The programme can in exceptional circumstances be offered particularly talented associate professors and senior researchers who have the potential to become professors.

With the programme, selected associate professors will be able to develop qualifications based on the above-mentioned entry criteria used by the faculty when assessing candidates for scientific positions. Candidates for the programme are nominated by the heads of department and finally selected by the dean.

Broad and open advertisement of positions remain the primary form of recruitment of senior researchers, and the programme for promotion to professor is only one of more development opportunities for associate professors.

The programme is also a tool in exceptional cases in the recruitment of associate professors from abroad.

### **Career development for early career scientists**

The Faculty has a special focus on early career scientists (post docs and assistant professors). The Faculty employs ~300 post docs, of which ~60% are international, and ~40% are women.

About 50% are recruited via open calls - the rest without calls, which is possible when the contract is shorter than 1 year. Many post docs experience a sequence of 1-year contracts.

To strengthen and make the career paths more transparent, we have launched a career development site on the home page (<https://nat.au.dk/en/about-the-faculty/career>) and an initiative where all young scientists develop career plans and have regular career development talks with their immediate supervisor.



## FUNDING SOURCES FOR RESEARCH IN DENMARK

The main sources of financing at the universities are state funds and income from research councils and private foundations. As a main principle, the financing basis of the universities is based on two sources:

- State funding earmarked for the universities in the annual Danish Appropriations Act (Finansloven) – the so-called basic funding
- Other income from national public research councils/foundations, the EU and private foundations

University basic funding is allocated to the main objectives – education, research and other purposes. Research at the universities are primarily funded by basic research funding and external grants from public and private foundations.

### Distribution of income sources for all Danish Universities (1000 EUR)

	2007	2017	2018	2019	2020	2021	2022
1. Education	946.559	1.211.201	1.204.124	1.199.026	1.190.590	1.203.061	1.178.284
2. Basic Funding for research	648.818	1.143.900	1.179.499	1.200.155	1.220.747	1.241.044	1.246.258
3. External grants from public foundations*	476.369	888.081	862.729	869.029	837.965	900.080	940.729
4. External grants from private foundations	112.370	320.275	381.466	439.723	475.756	504.366	582.822
5. Other income	43.957	36.559	36.328	39.136	38.606	42.423	28.478
6. Total income	2.513.795	3.837.653	3.900.278	4.001.450	4.014.603	4.166.726	4.161.674

\*incl EU/HORIZON

Source: [Universities Denmark](#)

### Public research funders

The largest public national research councils are:

- The **Independent Research Fund Denmark** allocates funding for independent and basic research based on the researchers own ideas. It is an umbrella organisation covering five committees: Medical Sciences, Natural Sciences, Humanities, Technology & Production Sciences, and Social Sciences respectively. In 2022, the Danish Council for Independent Research allocated € 188 million to research projects, including postdoctoral grants. The Fund finances both basic and applied research.
- **Innovation Fund Denmark** invests in the development of knowledge and technology that is expected to create growth and employment in Denmark. The Fund puts emphasis on research projects that addresses societal challenges preferably in collaboration with private companies. In 2022 the fund allocated € 255 million.
- **The Danish National Research Foundation** works to strengthen Danish basic research within all research fields. The Foundation's main working method is to set up and fund centres of excellence for 1-2 periods (5-10 years). In 2022 the Foundation allocated approximately € 84 million and two out of 11 new centres of excellence were founded at the Faculty of Natural Sciences. As a supplement to the centres of excellence, the



Foundation experiments with various other programs, particularly to promote internationalization of research.

Private foundations supporting research

In addition to the public foundations, Denmark has a number of large private foundations who fund research at the universities.

The private foundations have a unique position in the funding landscape in Denmark, and the total donations from the private foundations now exceed the funding from the public foundations. The private foundations are the primary funding resource for research at the Faculty of Natural Sciences.

In the last ten years it has been an ever increasing problem for the Danish Universities and the Faculty of Natural Sciences, that the private foundations do not pay overhead costs related to research projects and centres (or only a limited amount) (the public foundations in Denmark pay a overhead of 44% and in the Horizon Europe, the overhead rate is 25%).

But in November 2023 an [agreement was reached between the six largest private foundations in Denmark and Universities Denmark](#) (in Danish only).

The agreement entails specifically that the six foundations' contributions to covering indirect project costs for grants under 50 million DKK, sought through open competition, will henceforth occur in the form of a project supplement. The project supplement is set at 250,000 DKK per project-employed scientific full-time equivalent, typically for PhD and postdoc researchers, in research within the "wet" disciplines (natural science, health science, and technical science). For the "dry" disciplines (humanities, social sciences, law, and theology), the project supplement amounts to 200,000 DKK per project-employed scientific full-time equivalent.

With the current number of project-financed full-time equivalents from the private foundations involved in the agreement, it is estimated that the total contribution of the foundations to cover indirect costs will range between approximately 700 to 800 million DKK annually when the agreement is fully implemented.

The model and project supplement have been developed based on a thorough analysis of costs associated with various types of foundation-funded public research projects at universities. In this analysis, costs were divided into salaries, operations, and administration, leading to proposals for the allocation of costs.

The agreement stipulates that the foundations will cover a range of indirect costs associated with their grants for research at universities. This grants universities leeway to prioritize research funds, which in the long term can strengthen the breadth and quality of research at Danish universities.

<b>Overview of the largest private and public research funding foundations in Denmark:</b>	
Private foundations	Public foundations, councils and funding pools
Industrial foundations: - <a href="#">The Novo Nordisk Foundation</a> - <a href="#">The Carlsberg Foundation</a> - <a href="#">Lundbeckfonden</a> - <a href="#">Poul Due Jensens Foundation</a> - <a href="#">The Danish Industry Foundation</a> - <a href="#">Nordea-fonden</a>	Research and innovation-financed foundations: - <a href="#">Innovation Fund Denmark</a> - <a href="#">The Danish Council for Independent Research</a> (DFF) - <a href="#">The Danish National Research Foundation</a>



<ul style="list-style-type: none"> <li>- <a href="#">A.P. Møller Fonden</a></li> <li>- <a href="#">The LEO Foundation</a></li> </ul>	
<p>Public-benefit foundations:</p> <ul style="list-style-type: none"> <li>- <a href="#">Villum Fonden</a></li> <li>- <a href="#">Velux Fonden</a></li> <li>- <a href="#">Aarhus University Research Foundation</a>*</li> </ul> <p>(*supports only research at Aarhus University)</p>	<p>Danish Ministry of Higher Education and Science:</p> <p>Funding pools:</p> <ul style="list-style-type: none"> <li>- <a href="#">Funding pool for research infrastructure</a></li> <li>- Funding pool for innovation infrastructure</li> </ul>

The [Novo Nordisk Foundation](#) is by far the largest private foundation in Denmark (and is also the private foundation with the [largest endowment in the world](#)). The foundation granted more than 1000 mio. EUR for research in 2022; primarily in Denmark. A number that is expected to increase significantly in the coming years. Recently the foundation expanded its foundations so that it can also finance research in the natural sciences and technical sciences

Danish researchers also finance their research through international sources, eg. [the EU Framework Programmes for Research and Innovation](#).

## EDUCATION IN DENMARK AND AT AU

Public higher education institutions in Denmark are regulated by national legislation concerning degree structures, teacher qualifications and examinations. Accreditation in higher education has recently undergone a transition from programme-based accreditation to institutional accreditation, and Aarhus University received its accreditation in 2018. Programmes and institutions are accredited by national, independent accreditation agencies and the Accreditation Council.

The calculation of the university education funding from the ministry was revised in 2018. The new scheme is based on four types of grants: 1) Basic grants (25% of the institutions' funding in 2017) 2) Activity grants (number of students and graduates) 3) Result grants (based on the graduates' employment) 4) Quality grants.

The former funding scheme was primarily based on activity (the number of exams passed by students in the year).

The qualification levels form the basis for the Danish National Qualifications Framework for Higher Education, which is certified in accordance with the overarching [Bologna Framework](#) according to the principles adopted by the European Ministers of Higher Education.

Read more about the [Danish education system](#), the [Danish universities](#).

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