

# Report on research collaborations and investments in Norway

# Impact

# Executive summary

## Novo Nordisk Foundation



Between 2019 and 2023, the Novo Nordisk Foundation (NNF) financed 54 projects with Norwegian applicants, totaling EUR 27 million.



Between 2019 and 2023, NNF financed 3 projects with Norwegian co-applicants collaborating with Danish main applicants, totaling EUR 4 million.



Between 2019 and 2023 the Novo Nordisk Foundation funded 255 PhDs, Postdocs, and other scientists in projects involving Norwegian applicants.

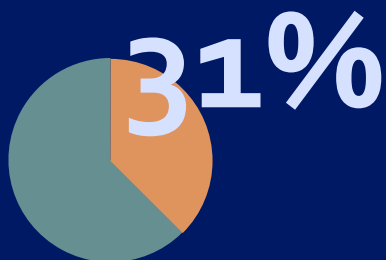
## Grant recipients

133

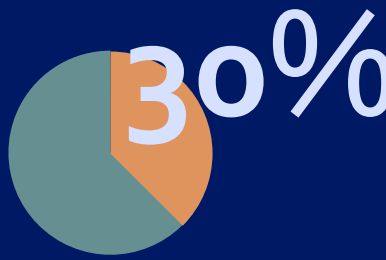
Between 2019 and 2023, Norwegian NNF grant recipients collaborated with 133 unique international companies. 32 are in the biotechnology sector, and 41 have less than 200 employees.

12

Between 2019 and 2023, NNF grant recipients collaborated with 12 unique Norwegian companies. 2 are in the biotechnology sector, and 5 of the companies have less than 200 employees.



Between 2019 and 2023, Norwegian NNF grant recipients have co-authored 792 publications with international researchers. 31% of the publications are among the top 10% most cited in their field.



Between 2019 and 2023, NNF grant recipients have co-authored 843 publications with Norwegian researchers. 30% of the publications are among the top 10% most cited in their field.

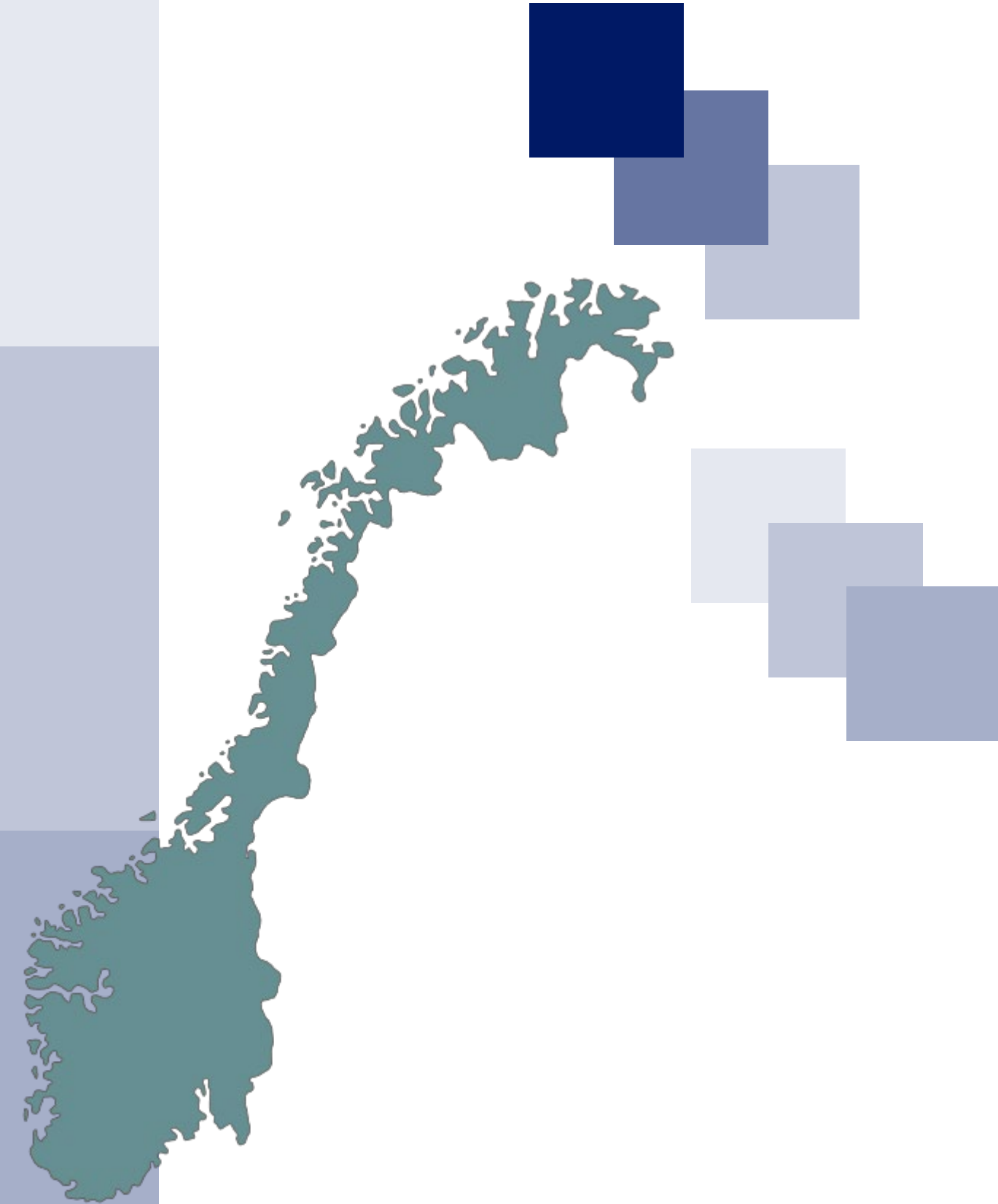
# Introduction

This report is presented in two parts;

- Norwegian NNF grant recipients' collaboration with international partners
- Danish grant recipients' collaboration with Norwegian partners

This report showcases NNF's contribution to the Norwegian academic community and industry.

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and Norwegian and international partners. Data in the presentation are based on activities between 2019 and 2023 (inclusive).



# Novo Nordisk Foundation



# The history of the Novo Nordisk Foundation



The Novo Nordisk Foundation dates back to 1922, when Nobel laureate August Krogh returned home from the United States and Canada with permission to produce insulin in the Nordic countries. This marked the beginning of the development of world-class diabetes medicine in Denmark and the establishment of several foundations that, many years later, merged into today's Novo Nordisk Foundation.

1952 – the **Novo Foundation** was established as the owner of the Novo Terapeutisk Laboratorium.

**1989** – the Novo Foundation and the Nordisk Insulin Foundation were merged into **Novo Nordisk Foundation** as part of the merger between the two firms Novo Terapeutisk Laboratorium and Nordisk Insulinlaboratorium in Novo Nordisk A/S.

In 2023 the **Novo Nordisk Foundation** awarded 751 grants with a total amount of EUR 1.0 billion.

For more information, please see the [Impact Report 2023](#)

1922 – the **Nordisk Insulin Foundation** was established as the owner of the Nordisk Insulinlaboratorium. The founders agreed that the profit from the sale of diabetes medicine should be used for scientific and humanitarian purposes.

# The Novo Nordisk Foundation is an independent Danish enterprise foundation

novo nordisk **fonden**

Benefiting people and society

Dividends

100% SHARES

novo **holdings**


Investors in life science

Dividends



novo nordisk®

28.1% shares  
76.9% votes



novozymes®

Rethink Tomorrow

25.6% shares  
72.7% votes

+ 144 other companies

## Grants & Investments

**Awarded in 2023:**  
 DKK 7.7 billion in grants (EUR 1.0 billion)  
 DKK 1.4 billion in investments (EUR 0.2 billion)  
**Projected grants in 2030:**  
 DKK +10.0 billion

## Focus areas

- Health
- Sustainability
- Life Science Ecosystem

## Investments

**Investment result in 2023:**  
 DKK 31.4 billion\* (EUR 4.2 billion)  
**Assets under mgmt.:**  
 EUR ~107 billion

## Focus areas

- Principal Investments
- Growth Investments
- Venture Investments
- Seed Investments
- Capital Investments

\* 35% NN/NZ, 65% other investments

# Facts about the Novo Nordisk Foundation

**3**

The world's  
third largest  
measured in grants

**1**

The world's  
largest  
measured in assets:

EUR **107** billion\*

## 2023 in numbers

Awarded DKK  
**7.7** billion  
EUR 1.0 billion

Paid out DKK  
**5.8** billion  
EUR 785 million

**751**  
Grants awarded

**3,364**  
Applications  
received

**17,3%**  
Success rate for  
research applications  
among open calls

Investment result 2023  
**31.4** DKK billion  
EUR 4.2 billion

\*Preliminary numbers year-end 2023

# Our vision to improve people's health and the sustainability of society and the planet is pursued through a three-pronged mission

**Progress research and innovation** in the prevention and management of cardiometabolic and infectious diseases, regenerative medicine, and equitable health outcomes



**Theme 1: Preventing and managing cardiometabolic disease**



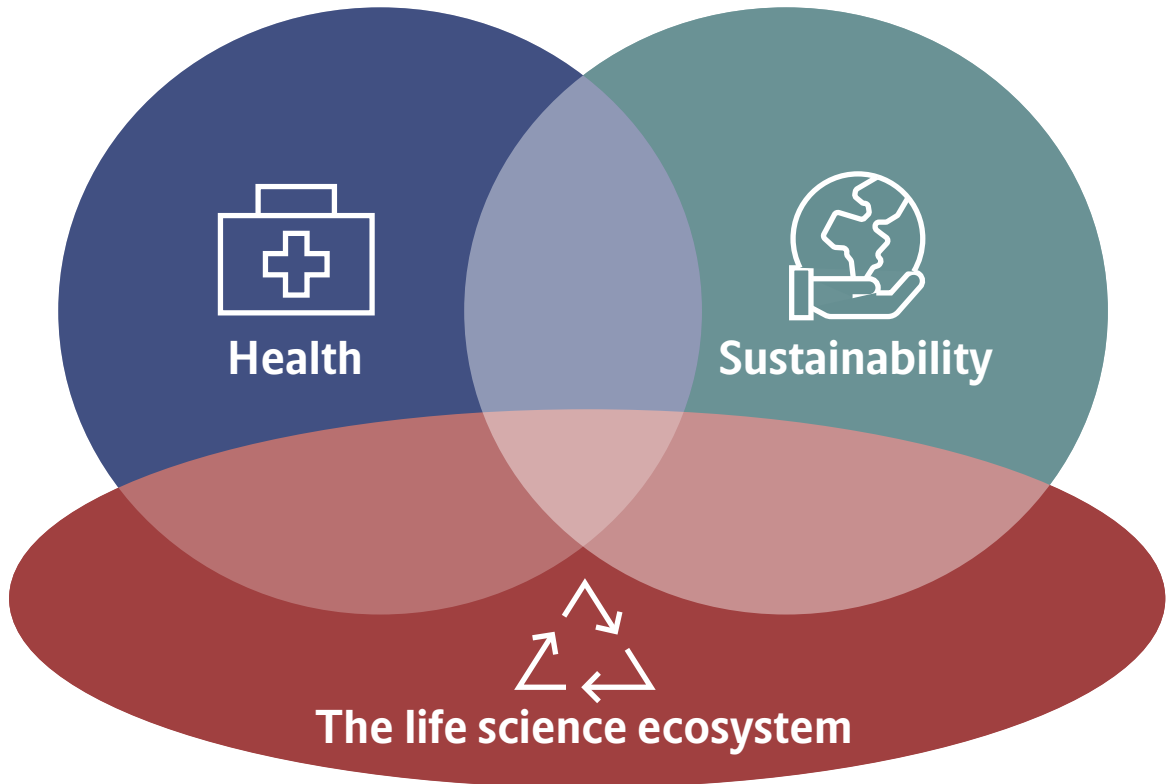
**Theme 2: Decreasing the burden and threat of infectious diseases**



**Theme 3: Advancing and applying regenerative medicine**



**Theme 4: Reducing inequity in health**



**Improving the sustainability of society** by advance knowledge and solutions to support the green transition in society



**Theme 1: Sustainable and high-yield agriculture**



**Theme 2: Sustainable food for healthy diets**



**Theme 3: High-impact climate change mitigation technologies**



**Theme 4: Supporting society in the green transition**

## **Invest in scientific research, education, and innovation**

to enable a world class life science ecosystem



**Theme 1: Fundamental research**



**Theme 3: Translational capacity and societal impact**



**Theme 2: Enabling research infrastructures and technologies**



**Theme 4: Education and science capital**





# International academic and industry collaborations involving Norwegian NNF grant recipients 2019-2023

# Centre of gravity

The centre of gravity for NNF is Denmark, followed by the Nordic countries of Finland, Norway, and Sweden. The Foundation awards grants to both Danish and Nordic researchers and to collaborations between researchers in the Nordic countries.

Between 2019 and 2023, the foundation has awarded **397** grants to main applicants in Norway, Sweden and Finland, **8** of these being collaborative projects with Danish partners.

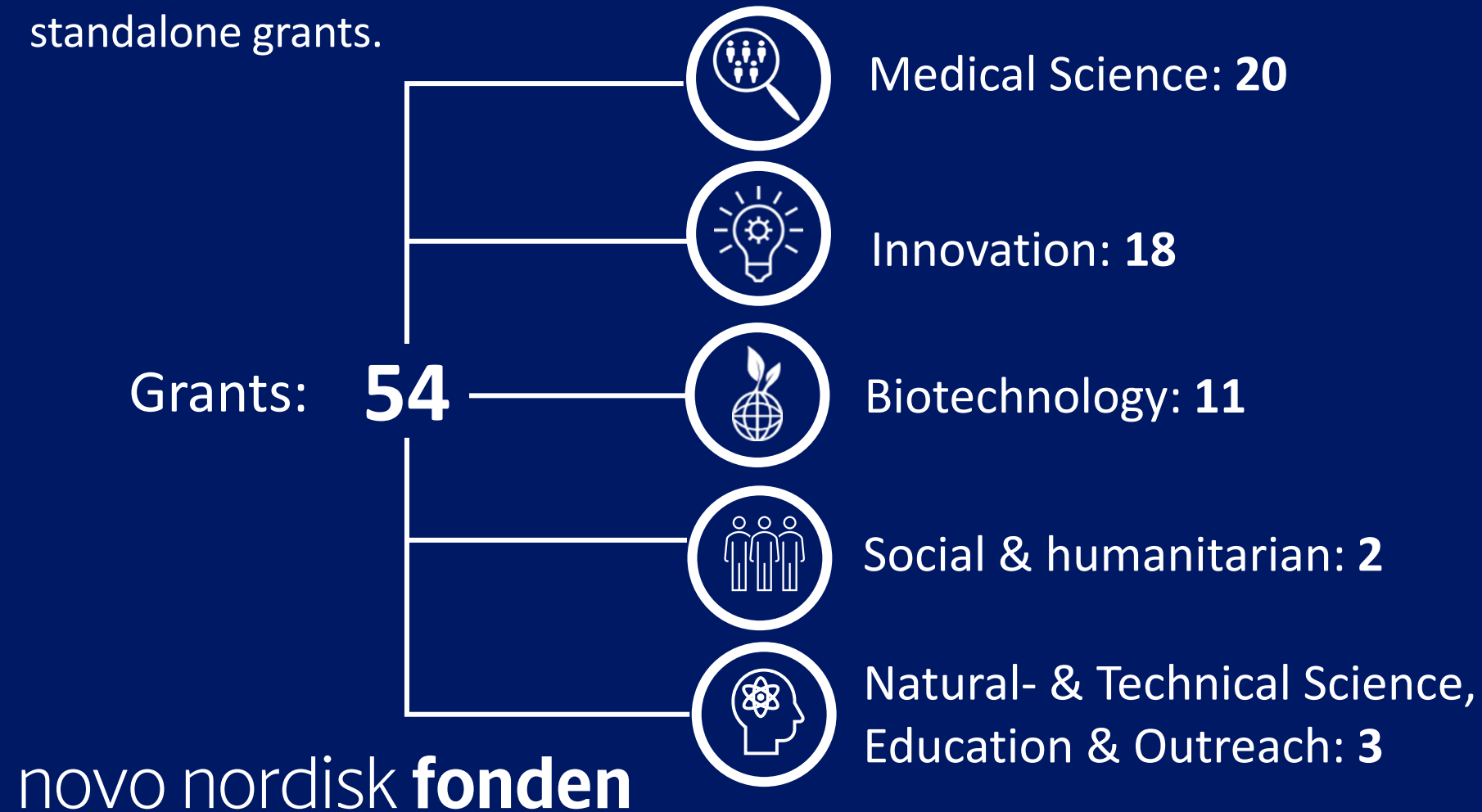
Applications by Year and Country



# 54 projects funded by NNF include Norwegian researchers as applicants

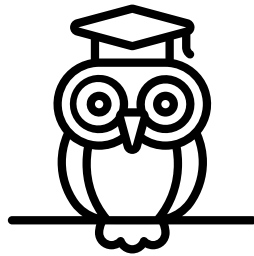
The Novo Nordisk Foundation has in the last five years (2019-2023) funded 54 projects with applicants from Norway. The total funding allocated to these projects is EUR 27 million.

The funded projects span research areas including Biotechnology, Innovation, Medical Science, Natural- & Technical Science, Social & Humanitarian, and Education & Outreach. 48 projects were awarded in open competition, while 6 were awarded as standalone grants.



- In 2023, University of Aarhus and Norwegian University of Science and Technology received funding for the project titled: CO2MOS: CO2 Metabolism Optimisation Strategy to prevent CO2 loss during methanol assimilation.
- In 2021, University of Aarhus and Oslo University Hospital received funding for the project titled: Nordic trial of abdominal versus vaginal cerclage to prevent preterm birth.

# Institutional affiliation of Norwegian applicants awarded a NNF grant



The **54** grants amounting to EUR **27** million are distributed between **14** different institutions in Norway, comprising universities, university hospitals, firms, and research organizations.

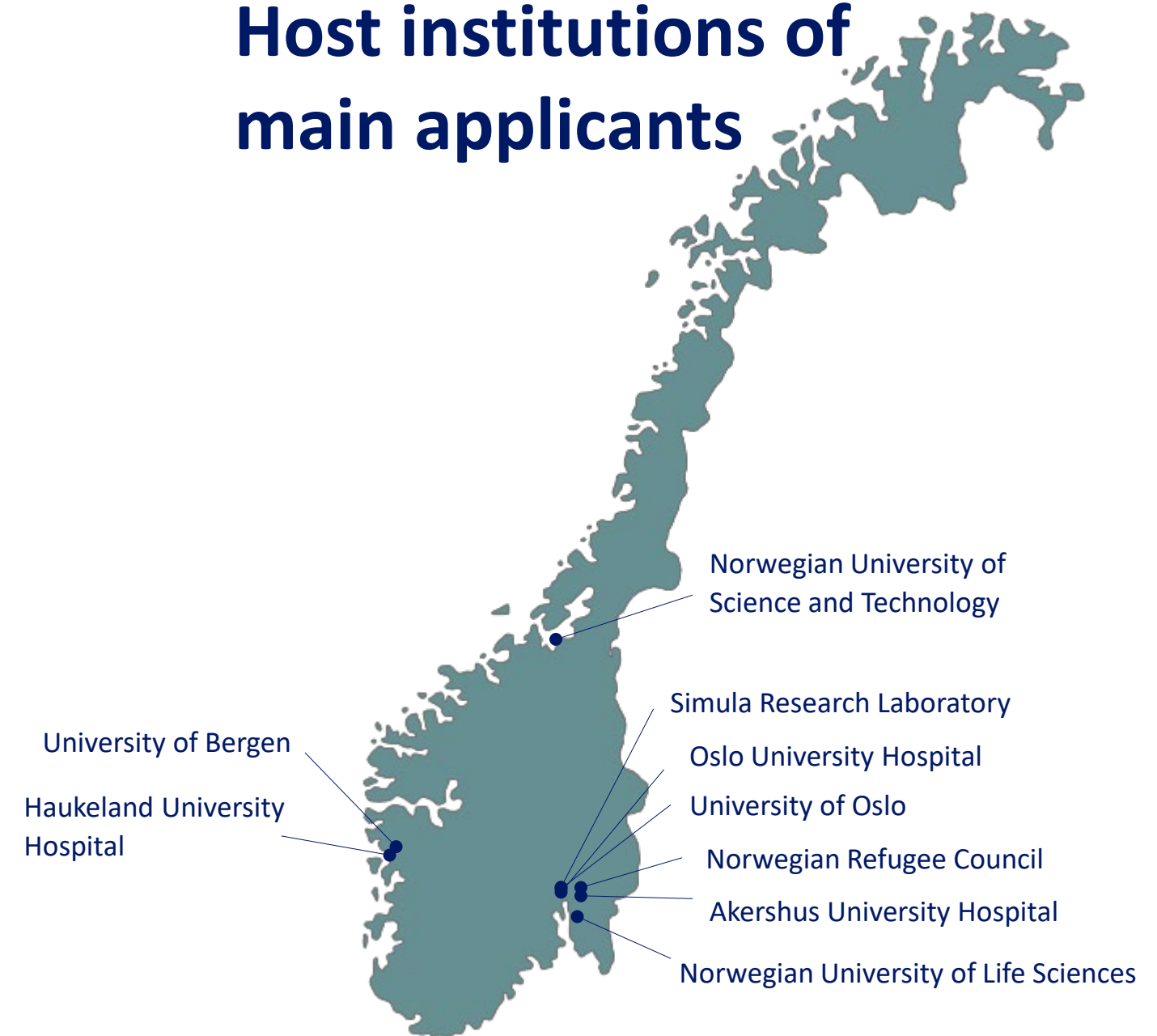


University of Bergen has received EUR **6** million in funding for a total of **10** projects.



Norwegian University of Life Sciences has received EUR **6** million for **5** projects.

## Host institutions of main applicants



# Fostering the development of research talent at all levels

In 2023 the Novo Nordisk Foundation supported 20 PhD students or similar, 11 Post-doctoral fellows or similar, and 47 other people in science at Norway based research institutions through projects awarded to Norwegian main applicants.

**The Copenhagen Bioscience Conferences** are a series of scientific conferences within biomedicine and biotechnology. They bring together some of the world's top researchers and young talent to discuss the latest scientific results and topics within their field. The purpose of the conferences is to enable participants to build an international network and to exchange knowledge and ideas.



Since 2019, **26** young Norwegian researchers have received a grant attending the Copenhagen Bioscience Conferences for young research talent.

*“An opportunity that facilitate high level training for PhD students and postdocs”*

*NNF applicant, 2015*

# Norwegian NNF grant recipients collaborate with many international partners

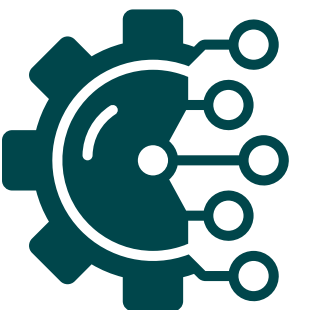
## Between 2019 and 2023...



The Foundation's Norwegian grant recipients have many collaborations with national and international project partners. In total, **2516** partners contribute to the collaborations.



Of these, **1783** are universities, university hospitals or hospitals. In total, **112** different countries are represented.



**385** of the international partners are US based.

Of these, **44** are companies that have co-authored at least one scientific article with a Norwegian grant recipient from the Novo Nordisk Foundation.

# Norwegian NNF grant recipients collaborate with many national and international companies

In total **133** unique national and international companies collaborate with Norwegian NNF grant recipients

**41** have less than 200 employees

**36** have less than 50 employees.

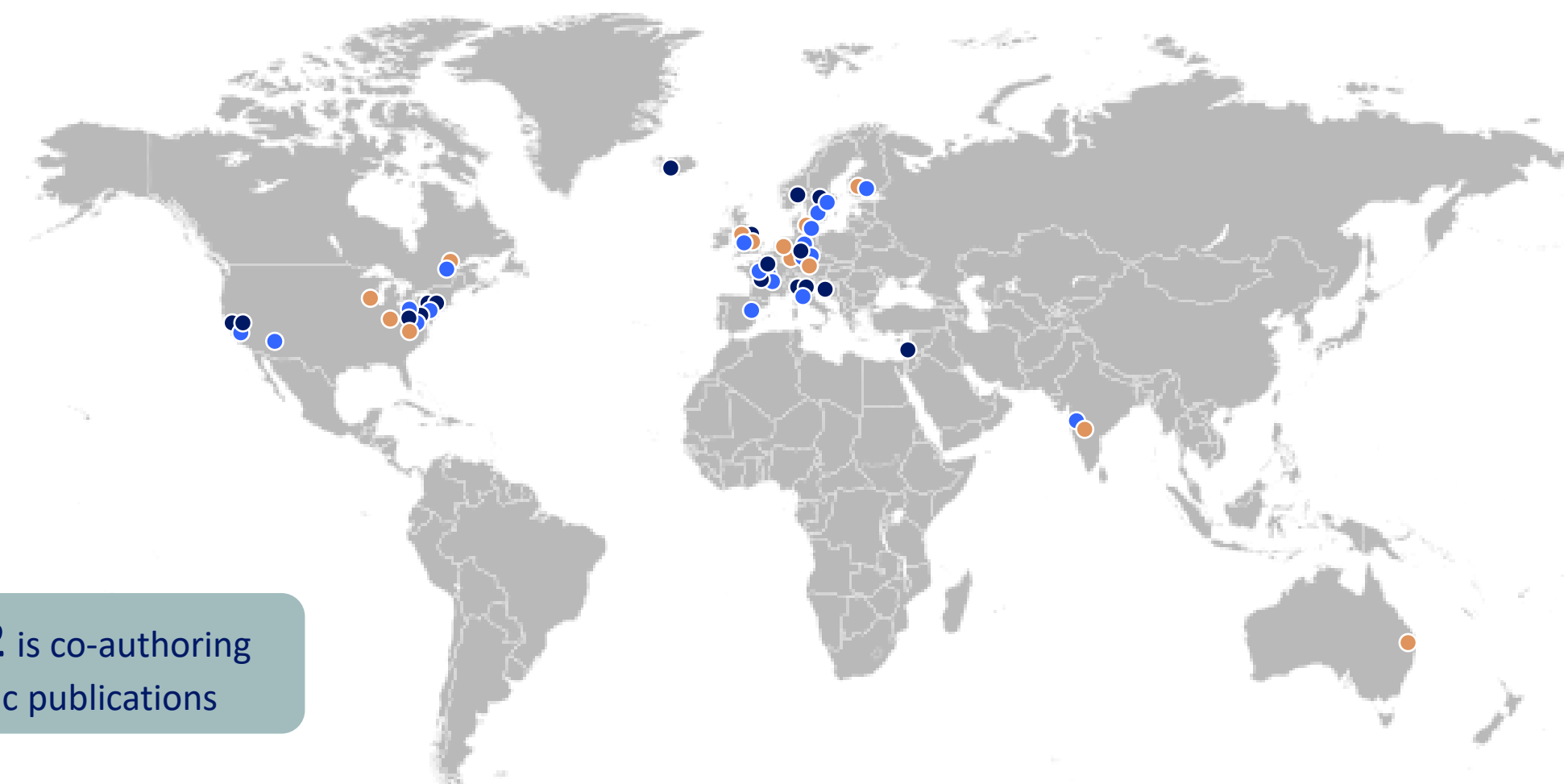
**32** companies are in the biotechnology sector

**8** are categorised as a pharmaceutical company

**21** are in the Medical Device, Consultancy, Software or Hospital & Health Care sector.



**132** is co-authoring scientific publications



- Biotechnology
- Pharmaceuticals
- Other

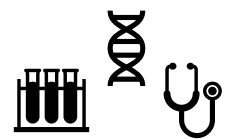
# Norwegian NNF grant recipients collaborate internationally



Between 2019 and 2023, Norwegian grant recipients have published **792** publications in internationally recognized journals.

**94%** of the publications are co-authored with researchers affiliated with an organization outside Norway.

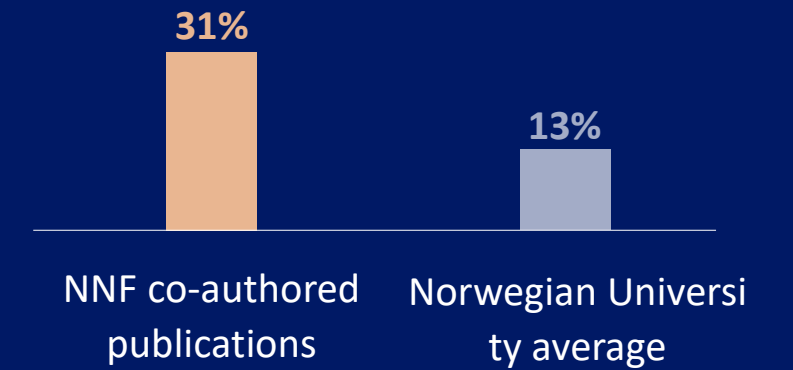
The highest number of international partners come from University of Copenhagen with **332** publications, followed by Karolinska Institutet with **216** publications, and University of Helsinki with **140** publications.



**31%** of the publications are within the top 10% most cited publication in their research field. The national average among the top Norwegian universities is 10%.

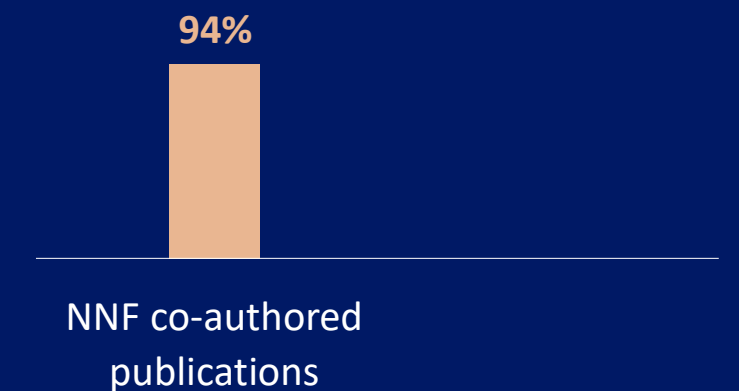
# NNF grants contribute to research excellence

Share of publications among the top 10% most cited world-wide in the same research field and year



# Norwegian grant recipients publish frequently with international peers

Share of publications co-authored by Norwegian researchers and researchers affiliated with an institution located outside Norway



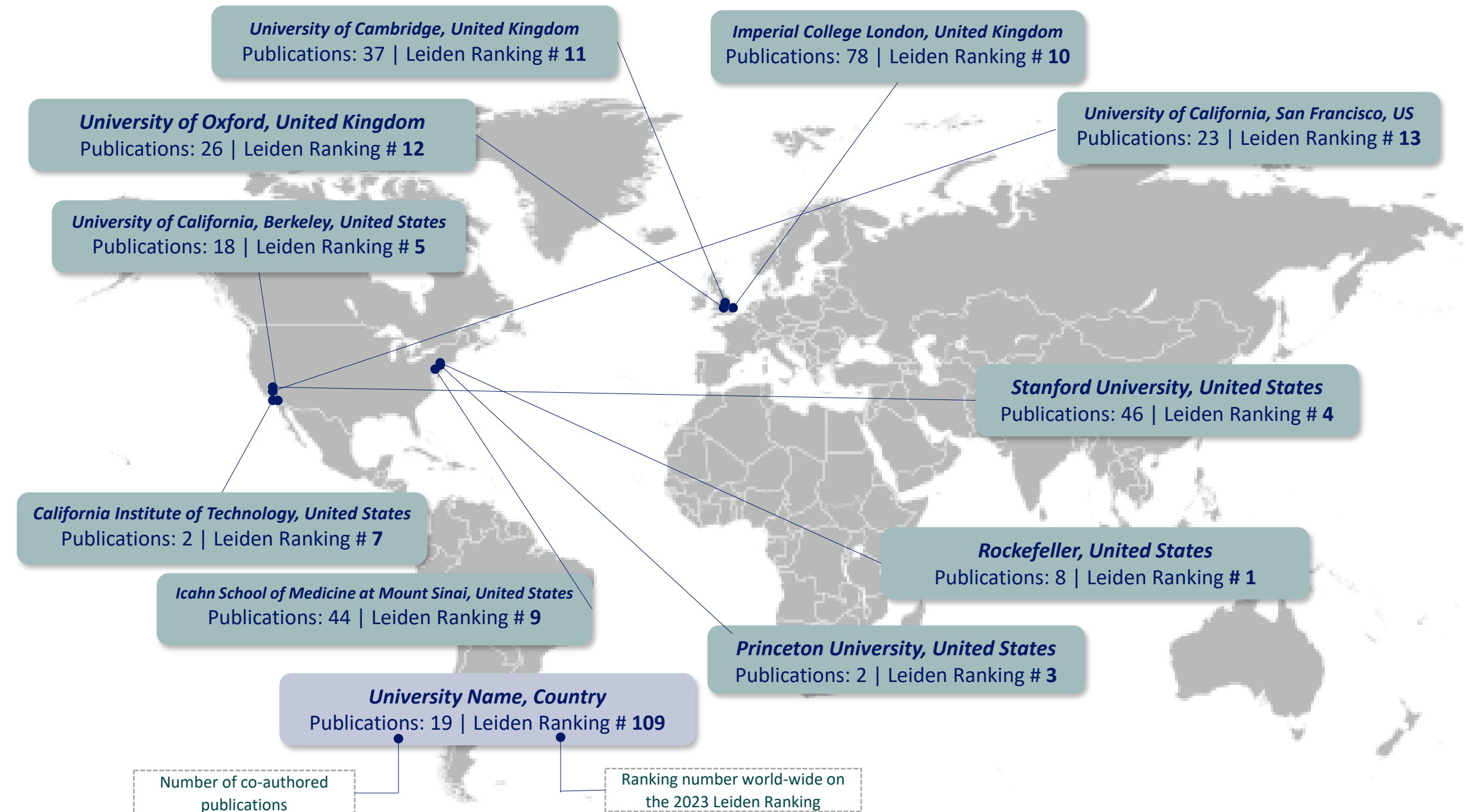


# Norwegian NNF grant recipients' collaboration with top international universities

## Top 10 universities collaborating with NNF's Norwegian grant recipients ranked by Leiden Rankings

- 1 Rockefeller University, United States
- 2 Princeton University, United States
- 3 Stanford University, United States
- 4 University of California, Berkeley, United States
- 5 California Institute of Technology, United States
- 6 Icahn School of Medicine at Mount Sinai, US
- 7 Imperial College London, United Kingdom
- 8 University of Cambridge, United Kingdom
- 9 University of Oxford, United Kingdom
- 10 University of California, San Francisco, United States

Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2023



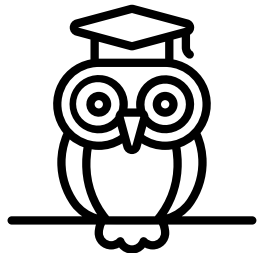


Norwegian academic  
and industry  
collaborations involving  
Danish NNF grant  
recipients 2019-2023

# Between 2019 and 2023, NNF has funded 3 projects involving Danish researchers collaborating with Norwegian peers



The Novo Nordisk Foundation has awarded a total of EUR 4 million to 3 projects with Norwegian co-applicants collaborating with Danish main applicants.



2 universities and university hospitals have been awarded a grant between 2019 and 2023.



Oslo University Hospital is co-applicant for a Medical Science grant. The EUR 3 million grant has a duration of 6 years starting in 2023.

## Norwegian co-applicants



# Danish NNF Grant recipients' collaborations with Norwegian partners

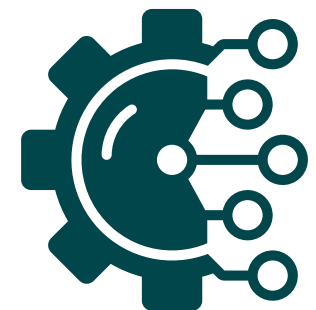
## Between 2019 & 2023...



The Foundation's grant recipients have collaborated with many international project's partners, including **256** collaborations between Danish and Norwegian partners.



**71** of those partners are universities and university hospitals.



**12** Norwegian companies co-authored at least one scientific article with grant recipients from the Novo Nordisk Foundation.

# Case stories

## University and university hospital collaborations

In 2023, University of Aarhus and Norwegian University of Science and Technology received funding for the project titled: CO2MOS: CO2 Metabolism Optimisation Strategy to prevent CO2 loss during methanol assimilation. The project has received a grant of 2.99 million EUR and has the following description:

Currently biotechnical production processes rely on sugar-based raw materials such as molasses and sugar cane as a source of carbon and energy. However, the use of sugar-based feedstock for bioindustry may lead to competition with food and feed industries for resources such as land and water, and indirectly contribute to deterioration of soil health and erosion of food security. Methanol is a potential alternative to sugar-based feedstock, but it can only be used as carbon source by methylotrophic bacteria, which are typically difficult to domesticate and less studied than their glucose-consuming counterparts.

In 2021, University of Aarhus and Oslo University Hospital received funding for the project titled: Nordic trial of abdominal versus vaginal cerclage to prevent preterm birth. The project has received a grant of 10.03 million EUR and has the following description:

Annually 15 million babies worldwide are born preterm, and the number is rising. Preterm birth (PTB) is a major cause of neonatal death and serious lifelong disabilities. It is often caused by a dysfunction of the uterine cervix. Normally, the uterine cervix is 35 mm long and composed of strong connective tissue capable of supporting the growing fetus, the placenta and the amniotic fluid until the beginning of term labor. A dysfunctional cervix can be either too short or composed of weak connective tissue. To prevent late miscarriage and preterm labor in women with a dysfunctional cervix, a prophylactic cerclage can be applied to the cervix.

# Danish NNF Grant recipients' collaboration with top Norwegian universities

7 out of 7 top Norwegian universities collaborate with Danish NNF grant recipients

		Project collaborations	Publication collaborations
1	University of Oslo	7	240
2	University of Bergen	10	226
3	Norwegian University of Science and Technology	7	203
4	University of Stavanger	0	5
5	Norwegian University of Life Sciences	5	39
6	UiT The Arctic University of Norway	1	54
7	OsloMet – Oslo Metropolitan University	0	21



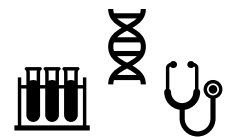
# Publication collaborations between Danish NNF grant recipients and Norwegian partners



Between 2019 and 2023, Danish NNF grant recipients have co-authored **843** publications with researchers located in Norway.



The highest number of Norwegian partners come from University of Oslo with **240** publications, followed by University of Bergen with **226** publications, and Norwegian University of Science and Technology with **203** publications.



**12%** of the co-authored publications are within the research areas *Medicine and Biochemistry, Genetics & Molecular Biology*.

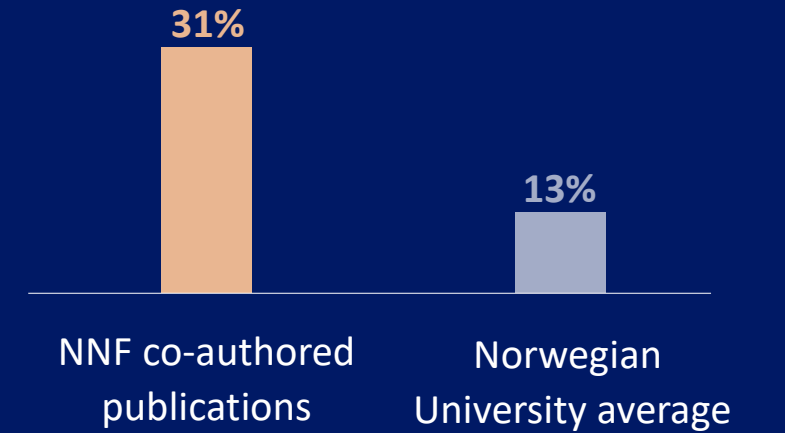


**30%** of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top Norwegian universities is **13%**.

Source: Novo Nordisk Foundation (2023) based on The Leiden Ranking

## NNF grants contribute to research excellence

Share of co-authored publications among the top 10% most cited world-wide in the same research field and year



# Danish researchers receiving grants from the Novo Nordisk Foundation collaborate with Norwegian companies

**In total 12 unique Norwegian companies collaborate with Danish NNF grant recipients**

**5** have less than 200 employees

**4** have less than 50 employees.

**2** companies are in the biotechnology sector

**1** are categorised as a pharmaceutical company

**3** are in the Hospital & Health Care sector.



**12** is co-authoring scientific publications





# The NNF Dashboard on Grants and Impact

The NNF Dashboard is your gateway to information about the entire value chain of grant development, starting with Calls & Applications, through to awarded grants and their impact. In addition to visualising numbers on awarded grants, gender distribution of grant holder and grant recipients host institutions, the NNF Dashboard provides insights and details on the overall development year-to-year.

For more information, please visit <https://novonordiskfonden.dk/facts-and-figures/>





# Appendix and additional slides

# Methods and sources

## Methods:

- National collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one collaborator/institute with origin in Norway.
- International collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one collaborator/institute with origin outside Norway.
- University rankings were based on the time period 2019-2023, across all sciences, with institutions with at least 100 publications and based on the PP(top10%).
- Co-publications were defined as publications with at least one Norwegian and one Danish author.
- Norwegian industry collaborators were defined as collaborations with companies registered in the Norway.
- International industry collaborators were defined as collaborations with companies registered outside Norway.
- Norwegian grant recipients were defined as successful NNF grant applicants.
- The number of Norwegian attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a Norwegian research institute.
- Novo Holdings A/S investments in Norway were defined as investments in companies with their headquarter located in the Norway.

## Sources:

- Researchfish (NNF grant data)
  - Research publication collaborations
  - Company project collaborations
  - Publications
- NNF-Data Platform, NORMA and OMADA (NNF grant application data)
  - Applicants of Norwegian origin
  - Co-applicants
  - Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2023
  - University rankings
  - Publication impact data
- Novo Holdings A/S
  - Investment data