

Report on research collaborations and investments in Finland

Impact

Executive summary

Novo Holdings



Between 2018 and 2022, Novo Holdings have invested in 2 companies based in Finland.



The current Novo Holdings portfolio include no Finnish companies

Novo Nordisk Foundation



Between 2018 and 2022, the Novo Nordisk Foundation (NNF) financed 96 projects with Finnish main applicants, totaling EUR 40 million.



Between 2018 and 2022, NNF financed 9 projects with Finnish co-applicants collaborating with Danish main applicants, totaling EUR 21 million.



In 2022, NNF funded 6 senior researchers and 104 young researchers, PhDs and Postdocs, in projects involving Finnish main applicants.

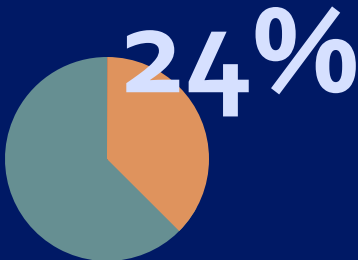
Grant recipients

62

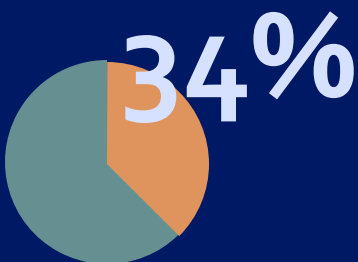
Between 2018 and 2022, Finnish NNF grant recipients collaborated with 62 international companies. 14 are in the biotechnology sector, and 16 have less than 50 employees.

11

Between 2018 and 2022, Danish NNF grant recipients collaborated with 11 Finnish companies. 2 are in the biotechnology sector, and 3 have less than 50 employees.



Between 2018 and 2022, Finnish NNF grant recipients have co-authored 600 publications with international researchers. 24% of the publications are among the top 10% most cited in their field.



Between 2018 and 2022, Danish NNF grant recipients have co-authored 423 publications with Finnish researchers. 34% of the publications are among the top 10% most cited in their field.

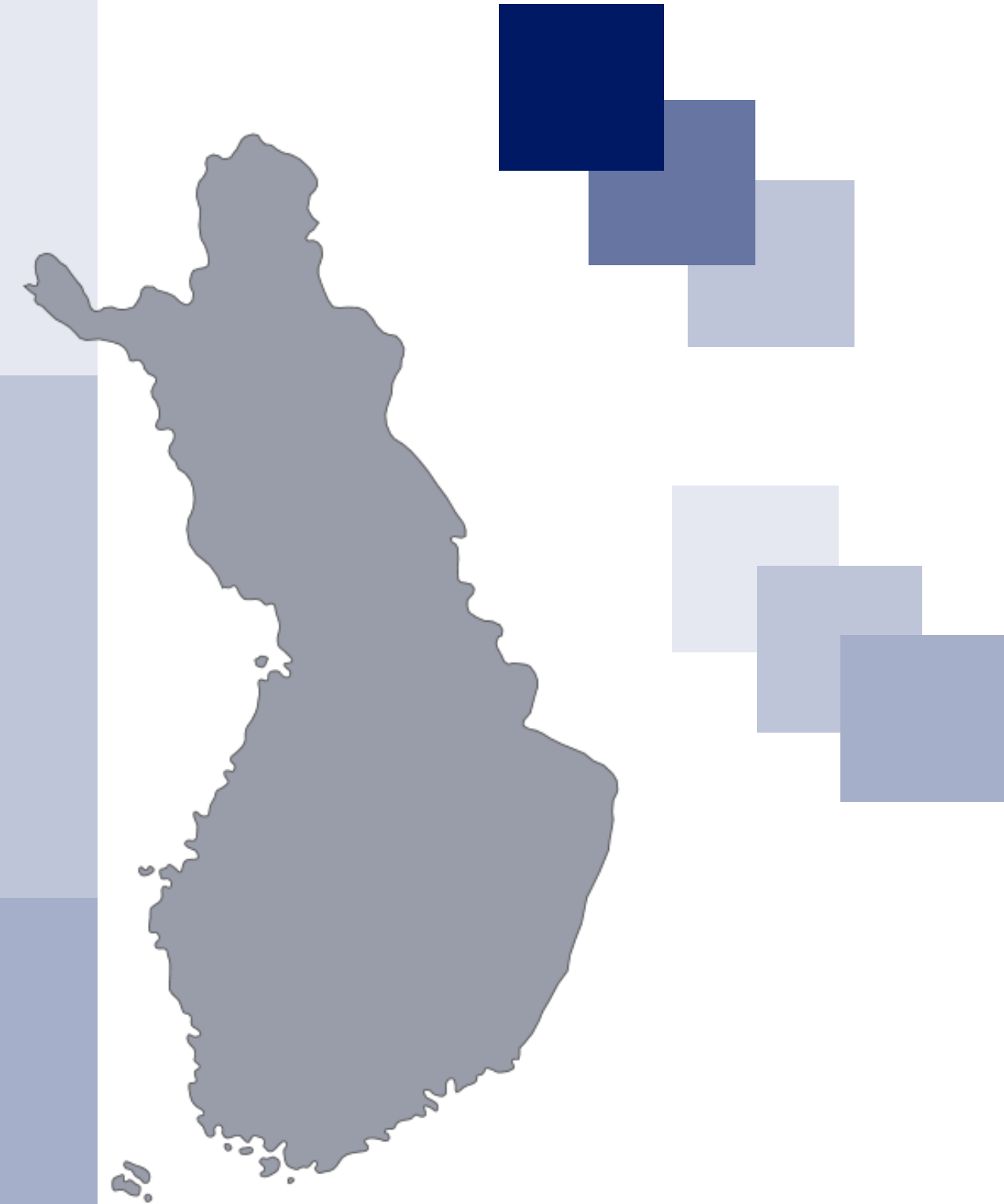
Introduction

This report is presented in two parts;

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

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

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and Finnish and international partners. Data in the presentation are based on activities between 2018 and 2022 (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 2022 the **Novo Nordisk Foundation** awarded 695 grants with a total amount of EUR 1.0 billion.

For more information, please see the [Impact Report 2022](#)

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



Facts about the Novo Nordisk Foundation

3

The world's
third largest
measured in grants

1

The world's
largest
measured in assets:

EUR 84 billion

2022 in numbers

Awarded DKK
7.5 billion
EUR 1.0 billion

Paid out DKK
5.2 billion
EUR 693 million

695
Grants awarded

3,070
Applications
received

18%
Success rate for
research applications
in open calls

Investment result 2022
3.1 DKK billion
EUR 413 million

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

Improving the lives of people by progress research and innovation in prevention and treatment of cardiometabolic and infectious diseases



Theme 1: Preventing cardiometabolic disease



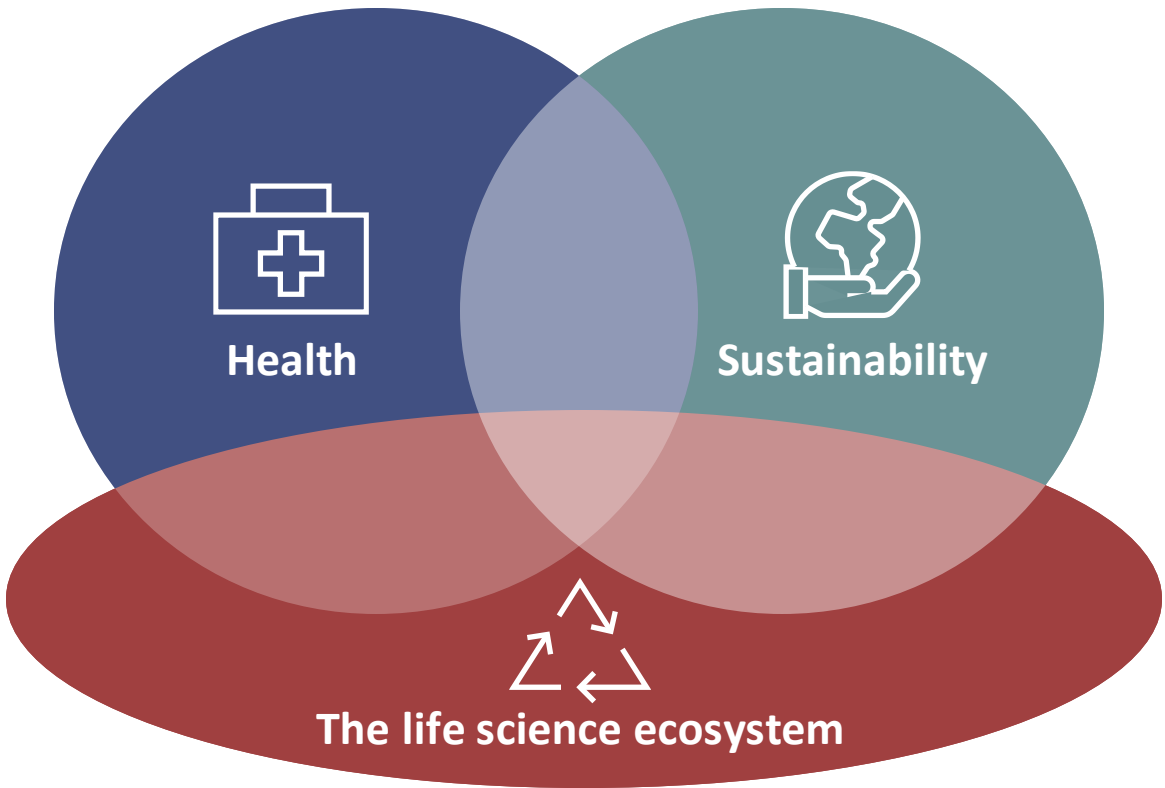
Theme 2: Understanding and managing cardiometabolic disease



Theme 3: Fighting inequity in health



Theme 4: Strengthening epidemic preparedness



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 2: Enabling research infrastructures and technologies



Theme 3: Translational capacity and societal impact



Theme 4: Education and science capital

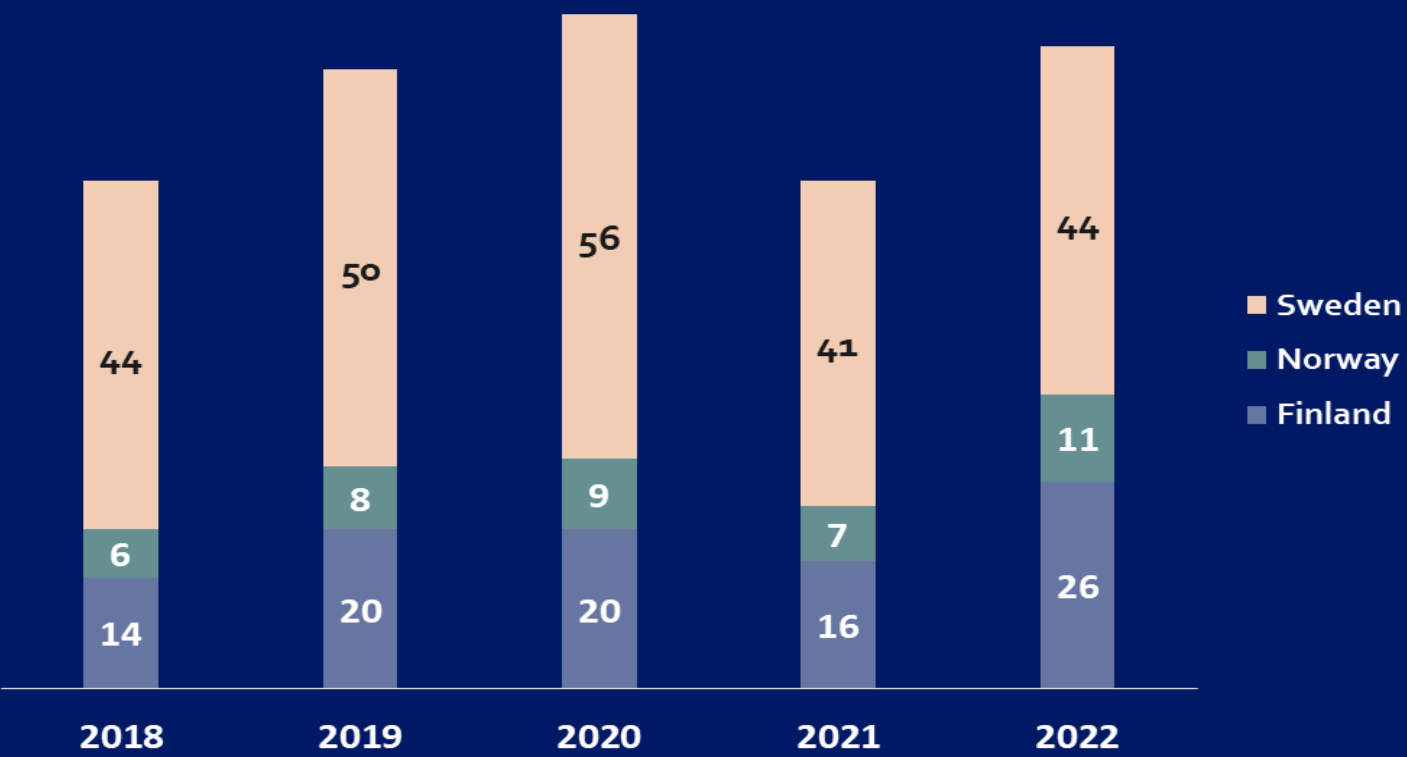


International academic
and industry
collaborations involving
Finnish NNF grant
recipients 2018-2022

Centre of gravity

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

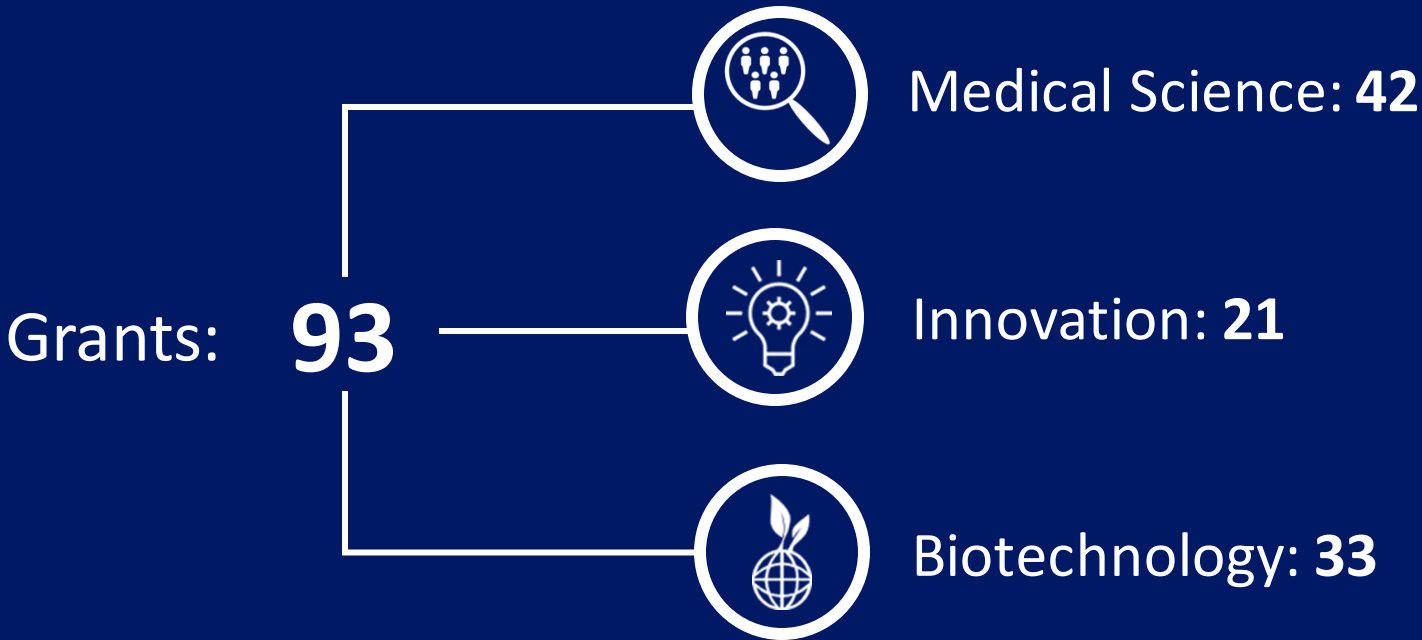
Between 2018 and 2022, the foundation has awarded **372** grants to main applicants in Sweden, Norway and Finland, **8** of these being collaborative projects with Danish partners.



96 projects funded by NNF include Finnish researchers as main applicants

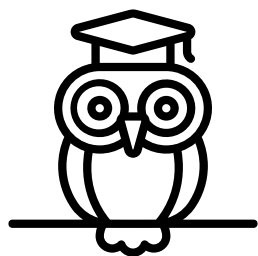
The Novo Nordisk Foundation has in the last five years (2018-2022) funded 96 project with main applicants from Finland. The total funding allocated to these projects is EUR 40 million.

The funded projects span programme areas including Medical Science, Biotechnology and Innovation. 93 projects were awarded in open competition, while 3 were awarded as standalone grants.



- **University of Helsinki** have received funding for the project “Revealing mechanisms of post processing senescence to secure the supply of high-quality vegetables for the planetary diet”. The EUR 1.4 million grant has a duration of five years.
- **University of Turku and Royal Institute of Technology (Sweden)** have received funding for the project: “Advanced photosynthetic biocatalysts”. The EUR 0.5 million grant has a duration of 3 years.

Institutional affiliation of Finnish main applicants awarded a NNF grant



The **96** grants awarded to Finnish main applicants are distributed between **14** different institutions in Finland, comprising universities, university hospitals and non-profit organizations.

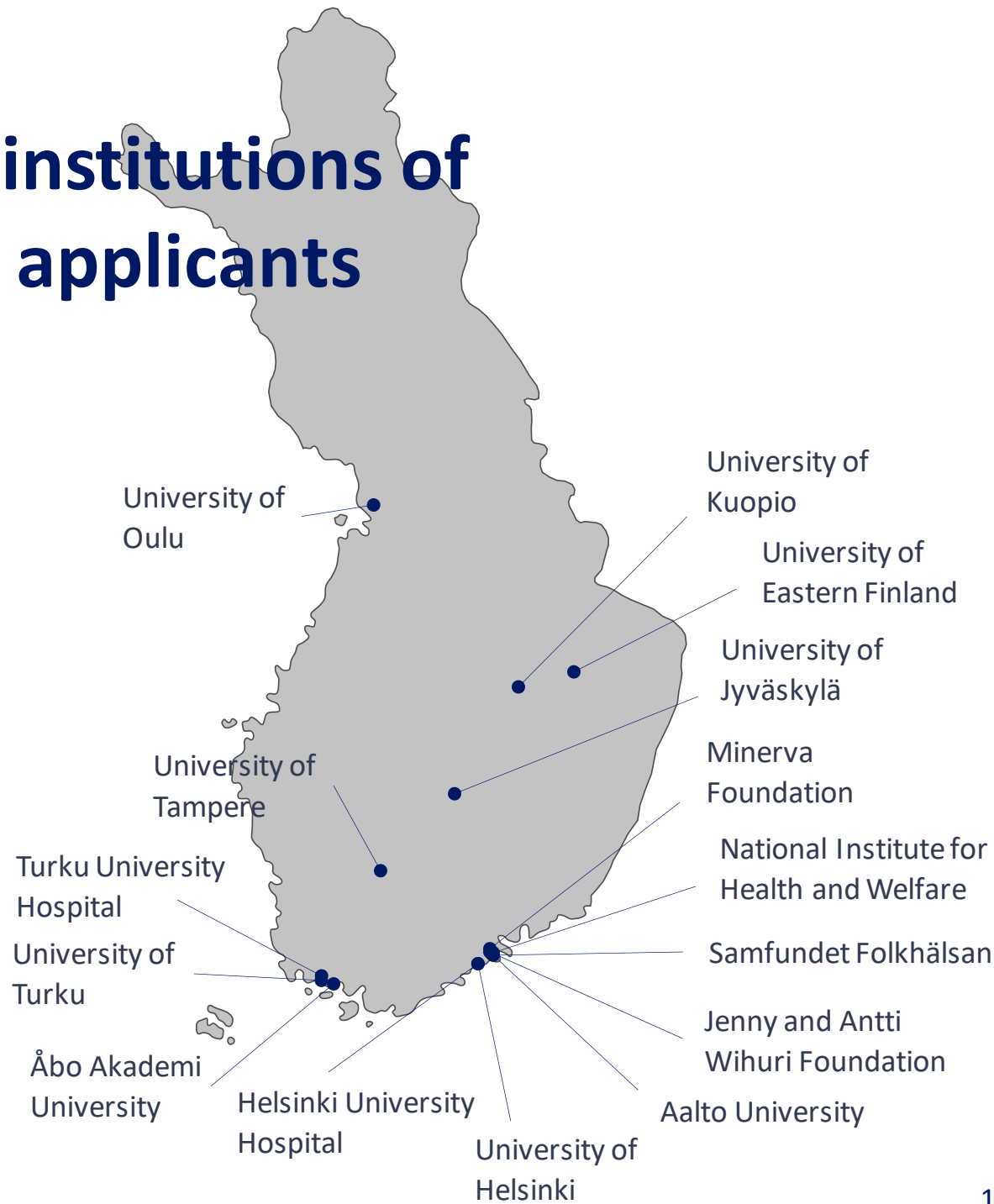


University of Helsinki has received EUR **16** million in funding for a total of **28** projects.



University of Turku has received EUR **7** million for a total of **26** projects.

Host institutions of main applicants



Fostering the development of research talent at all levels

In 2022 the Novo Nordisk Foundation supported 6 researchers, 48 PhDs, 56 Postdocs and 113 other staff at Finland based research institutions through projects awarded to Finnish 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 2014, **30** young Finnish researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences for young research talent.

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

NNF applicant, 2015

Patents from projects with Finnish main applicants

The Foundation’s projects with Finnish main applicants have in the last five years (2018-2022) produced a total of 5 patents and patent applications, 1 of these are granted patents. The patents and applications span programme areas including Innovation and Medical Science.



In 2021, **Tampere University** researchers were granted a patent for a method for QT correction. The patent is attributed to a project that received funding from NNF in 2020.



Finnish NNF grant lead to university spin-out

A NNF's Explorative Pre-seed grant received by Finnish main applicant in 2020 has resulted in the spin-out company "StemSight". The company was spun out from Tampere University in 2021.

***StemSight** develops off-the-shelf cell therapies to address unmet medical needs in corneal blindness. StemSight is a pioneer in combining iPS-derived cells with functional biomaterials. The primary goal is to accelerate tissue regeneration, enhance the safety of cell therapies, and simplify cell delivery.*



Finnish NNF grant recipients collaborate with many international partners

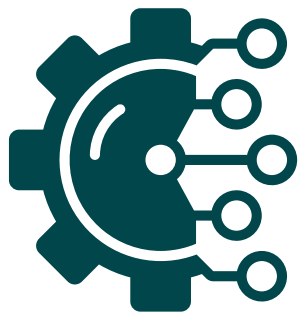
Between 2018 and 2022...



The Foundation's Finnish grant recipients have many collaborations with national and international project partners. In total, **915** partners contribute to the collaborations.



Of these, **646** are universities, university hospitals or hospitals.
In total, **74** different countries are represented.

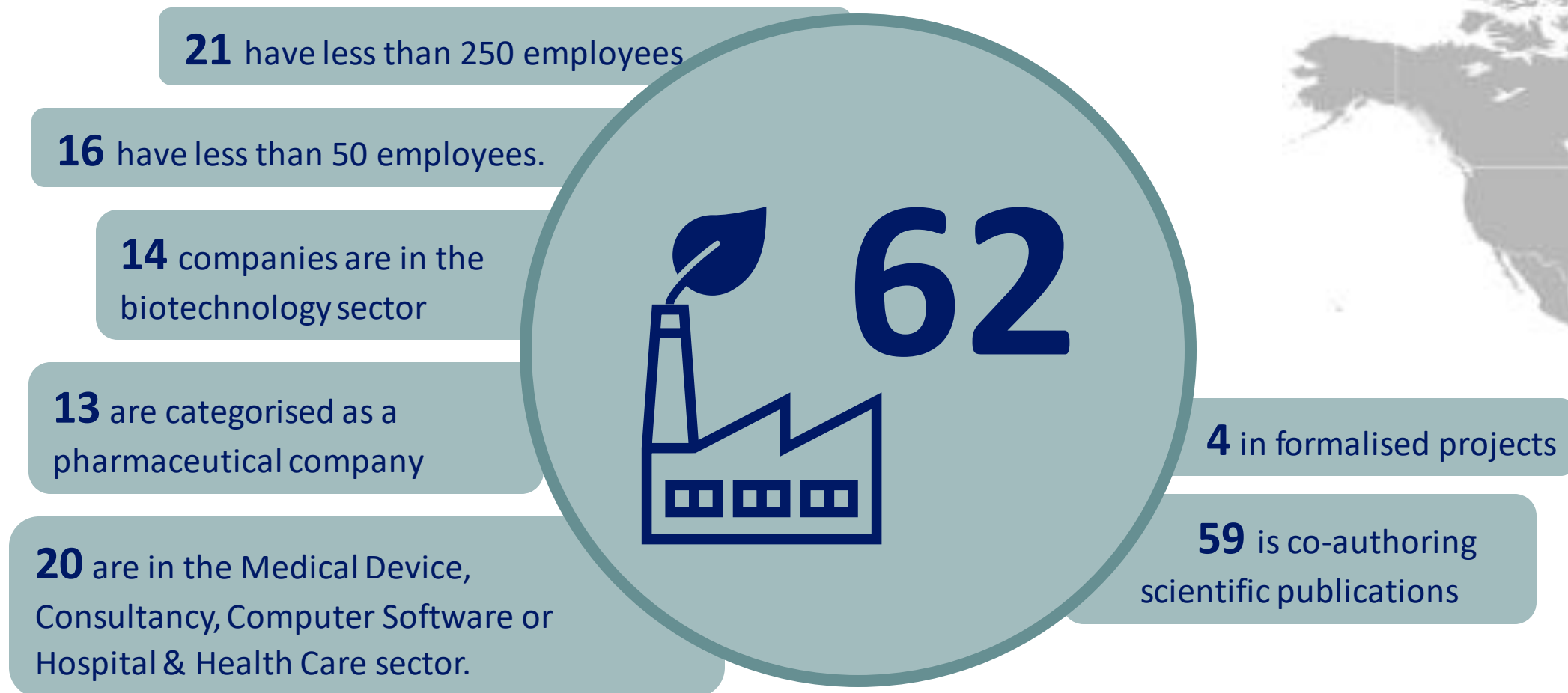


173 of the international partners are US based.

Of these, **21** are companies that have co-authored at least one scientific article with a Finnish grant recipient from the Novo Nordisk Foundation.

Finnish NNF grant recipients collaborate with many national and international companies

In total 62 national and international companies collaborate with Finnish NNF grant recipients



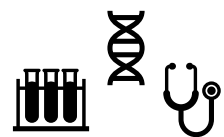
Finnish NNF grant recipients collaborate internationally



Between 2018 and 2022, Finnish grant recipients have published **600** publications in internationally recognized journals.



80% of the publications are co-authored with researchers affiliated with an organization outside Finland. The national average among the top Finnish universities is 66%.



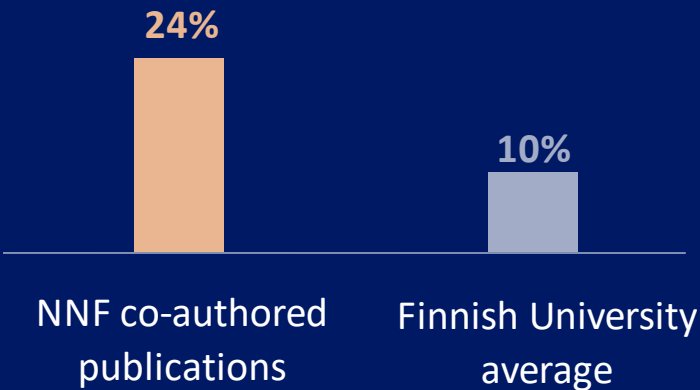
The most frequent international partner is Norwegian University of Science and Technology with 82 publications, followed by Imperial College London with 52 publications, and The University of Edinburgh with 39 publications.



24% of the publications are within the top 10% most cited publication in their research field. The national average among the top Finnish universities is 10%.

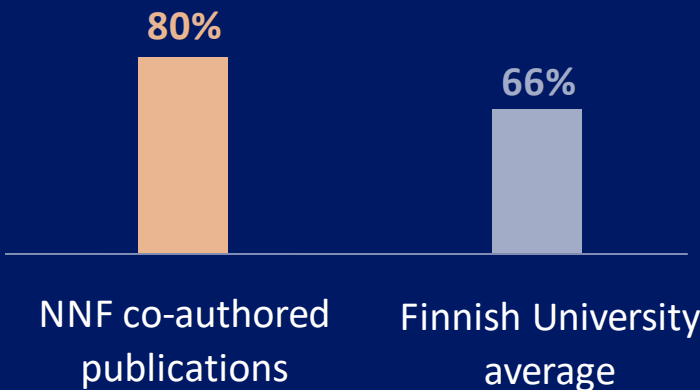
NNF grants contribute to research excellence

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



Finnish grant recipients publish frequently with international peers

Share of publications co-authored by Finnish researchers and researchers affiliated with an institution located outside Finland

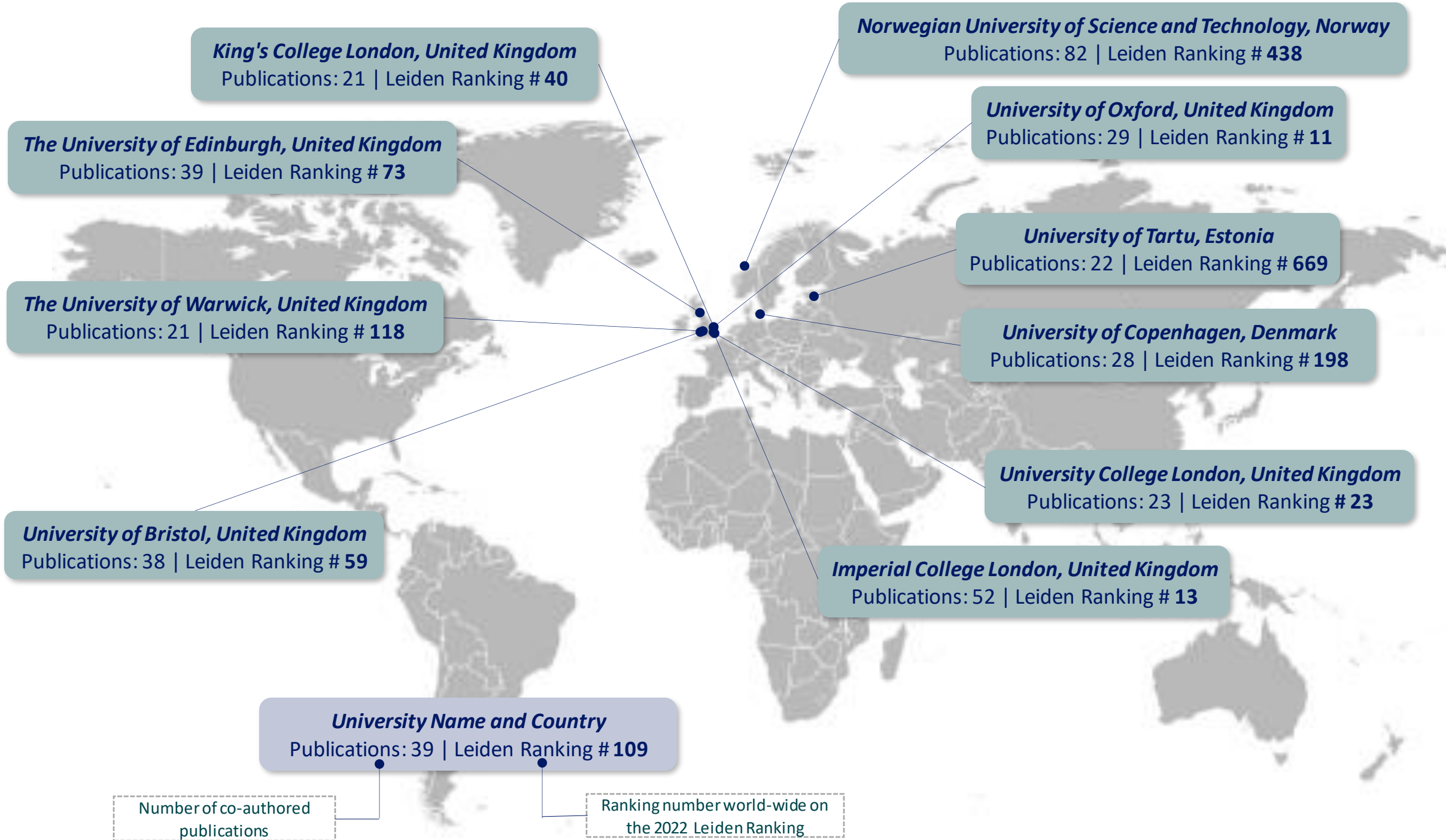


Finnish NNF grant recipients’ collaboration with top international universities

Top 10 universities collaborating with NNF’s Finnish grant recipients ranked by number of publication collaborations

1	Norwegian University of Science and Technology, Norway
2	Imperial College London, United Kingdom
3	The University of Edinburgh, United Kingdom
4	University of Bristol, United Kingdom
5	University of Oxford, United Kingdom
6	University of Copenhagen, Denmark
7	University College London, United Kingdom
8	University of Tartu, Estonia
9	King's College London, United Kingdom
10	University of Warwick, United Kingdom

Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2022



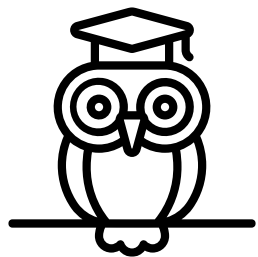


Finnish academic and industry collaborations involving Danish NNF grant recipients 2018-2022

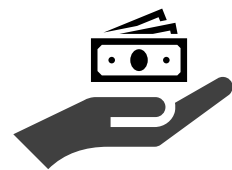
Between 2018 and 2022, NNF has funded 9 projects involving Danish researchers collaborating with Finnish peers



The Novo Nordisk Foundation has awarded a total of EUR **21** million to **9** projects with Finnish co-applicants collaborating with Danish main applicants.

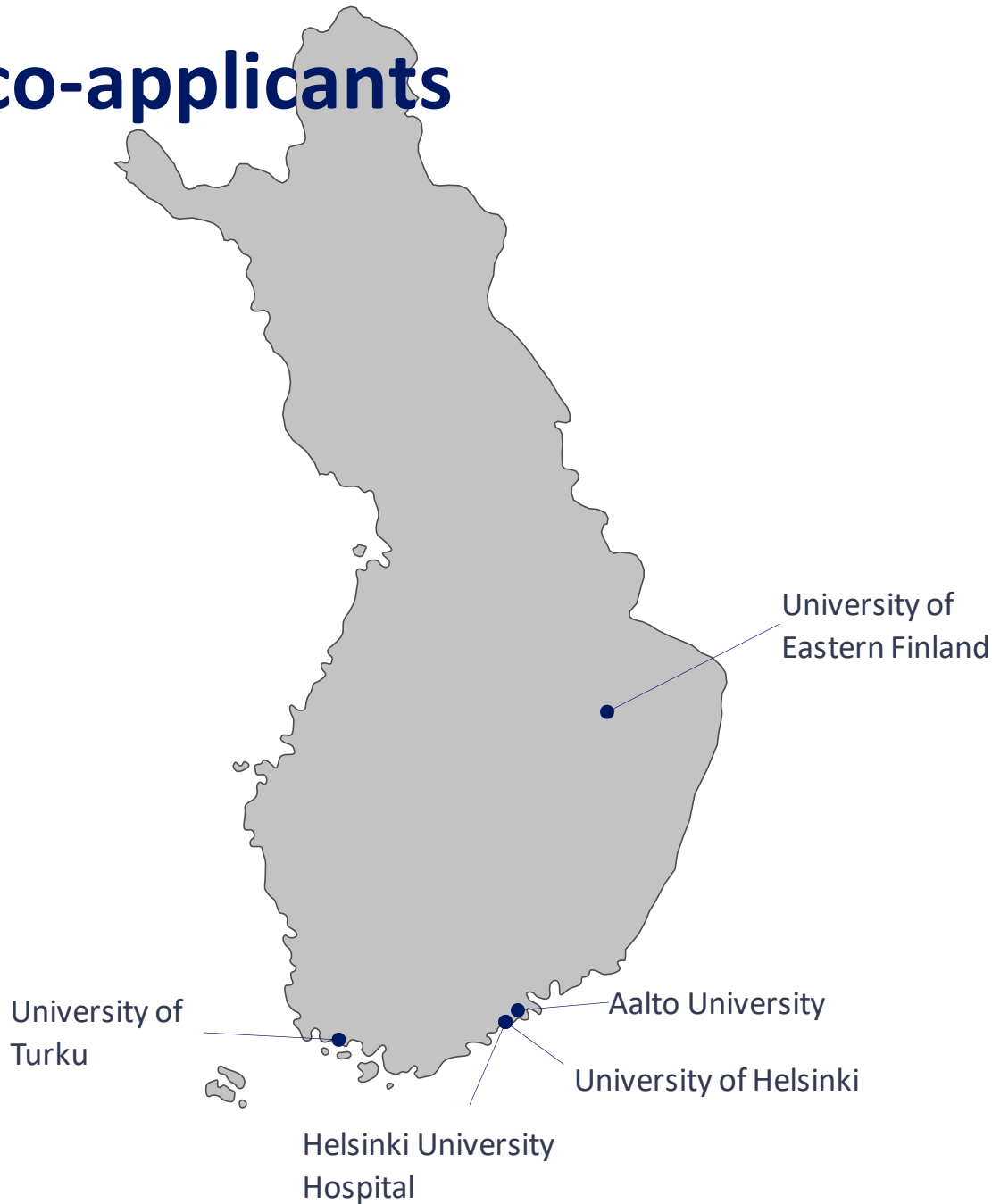


5 universities and university hospitals have been awarded a grant between 2018 and 2022.



University of Helsinki is co-applicant for a Challenge Programme grant. The EUR 8 million grant has a duration of six years starting in 2021.

Finnish co-applicants



Danish NNF Grant recipients' collaborations with Finnish partners

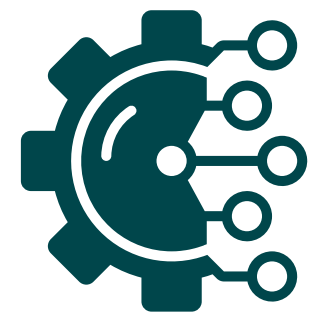
Between 2018 & 2022...



The Foundation's grant recipients have collaborated with many international project's partners, including **53** collaborations between Danish and Finnish partners.



22 of those partners are universities and university hospitals.



7 Finnish companies co-authored at least one scientific article with grant recipients from the Novo Nordisk Foundation.

Case stories

A University Collaboration



A collaboration between **Aalborg University** and the **University of Eastern Finland** develop the first-ever multi-scale mathematical model of knee osteoarthritis. This comprehensive model facilitates computer-driven investigations into various patient-specific KOA treatment options and their predicted outcomes from the body to the cellular levels.

A University Collaboration

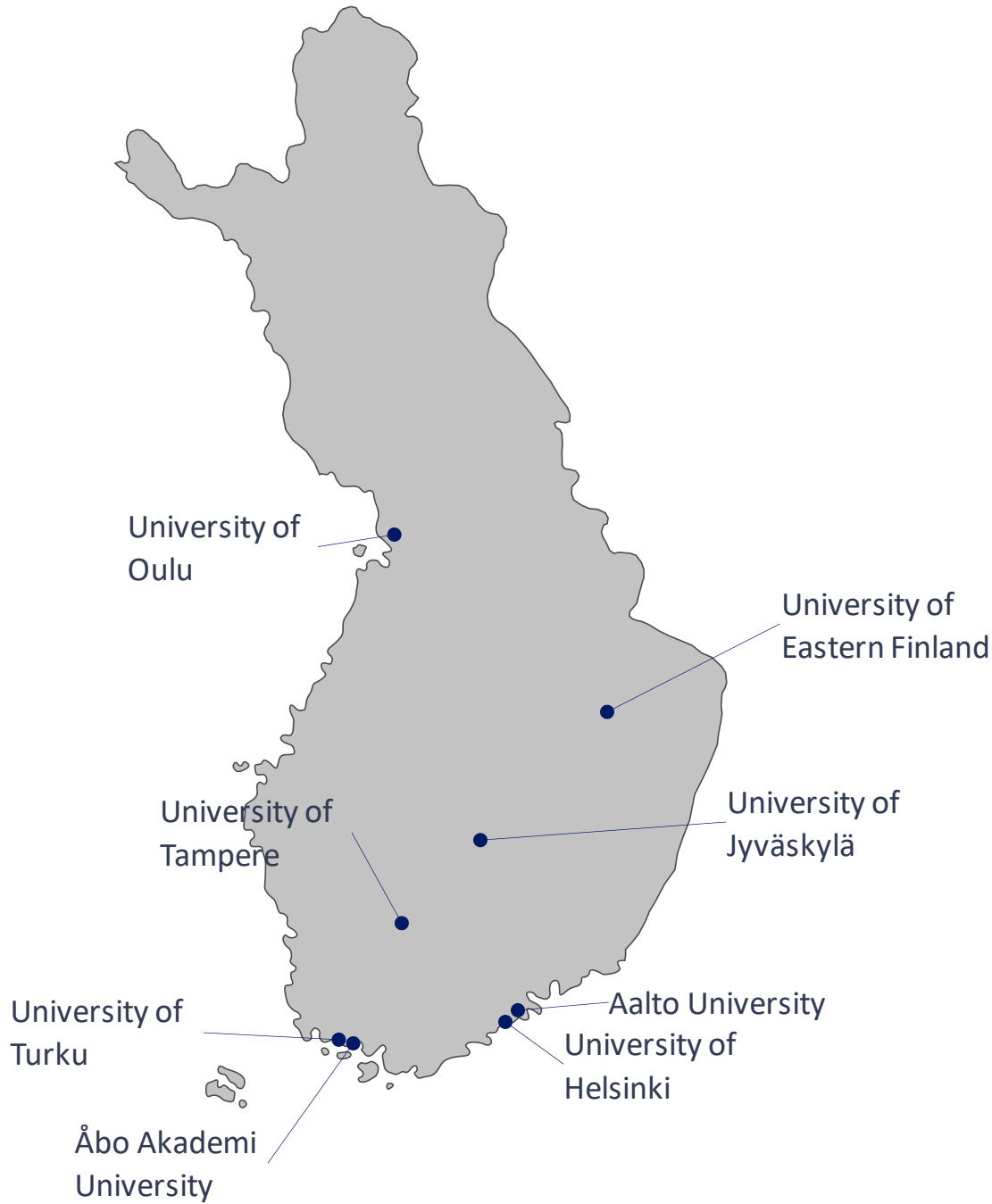


A collaboration between **Aarhus University** and **University of Helsinki** investigate the population genetic consequences of the dramatic declines observed in insect diversity and abundance, and the potential consequences for their ability to perform ecosystem services such as pollination and natural pest control. The project will utilize cutting-edge methods such as large-scale whole genome sequencing and environmental DNA approaches, and performance assays to establish relationships between genetic diversity and functional responses.

Danish NNF Grant recipients’ collaboration with top Finnish universities

8 out of 10 top Finnish universities collaborate with Danish NNF grant recipients

		Project collaborations	Publication collaborations
1	Aalto University	0	3
2	University of Helsinki	4	207
3	University of Oulu	1	32
4	University of Jyväskylä	0	13
5	University of Turku	2	75
6	University of Eastern Finland	0	87
7	University of Tampere	0	59
8	Åbo Akademi University	0	2
9	University of Vaasa	0	0
10	University of Lapland	0	0



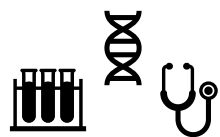
Publication collaborations between Danish NNF grant recipients and Finnish partners



Between 2018 and 2022, Danish NNF grant recipients have co-authored **423** publications with researchers located in Finland.



The highest number of Finnish partners come from University of Helsinki (207 publications) followed by Helsinki University Hospital (98 publications) and University of Eastern Finland (87 publications).



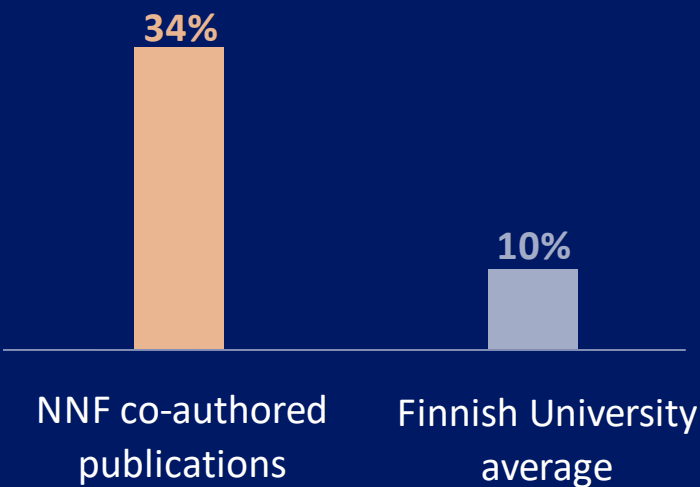
62% of the co-authored publications are within the research areas *Medicine and Biochemistry, Genetics & Molecular Biology*.



34% of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top Finnish universities is 10%.

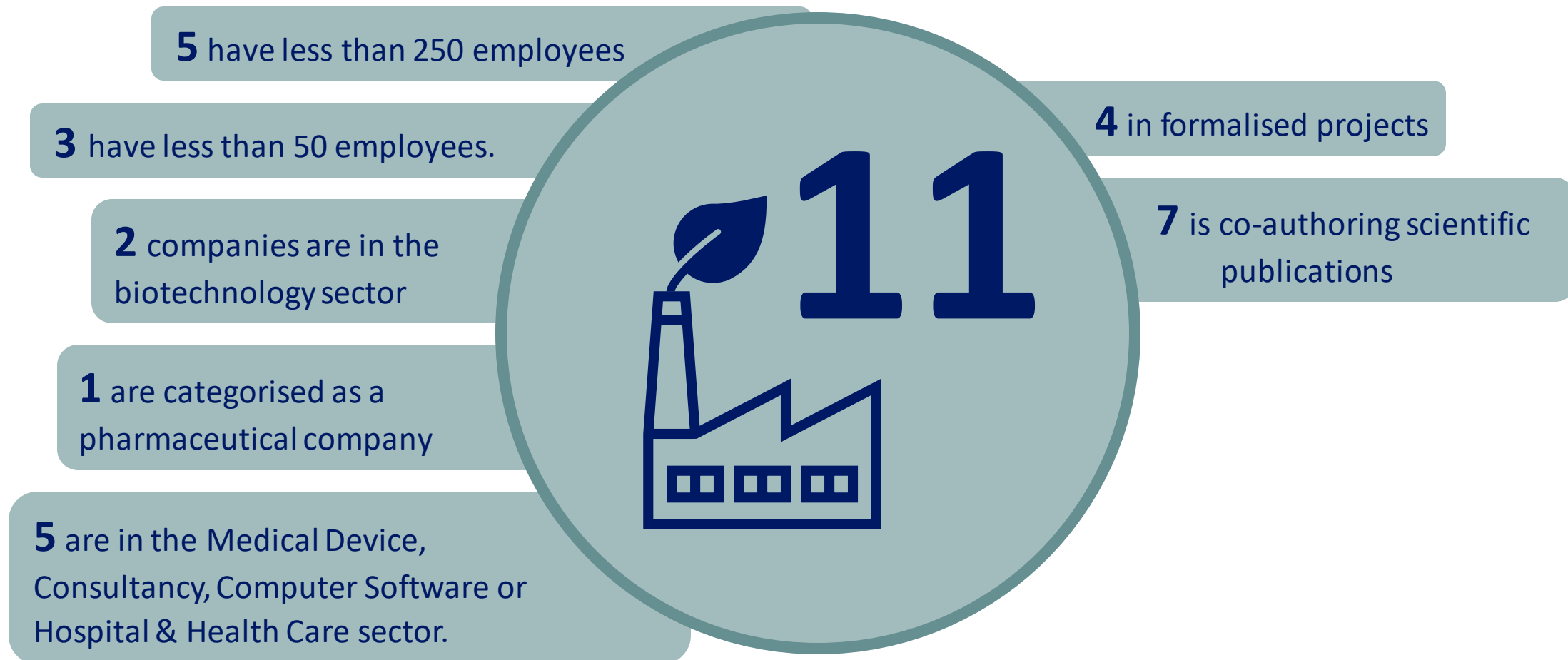
NNF grants contribute to research excellence

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 Finnish companies

In total 11 Finnish companies collaborate with Danish NNF grant recipients



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 Finland.
- 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 Finland.
- University rankings were based on the time period 2018-2022, 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 Finnish and one Danish author.
- Finnish industry collaborators were defined as collaborations with companies registered in the Finland.
- International industry collaborators were defined as collaborations with companies registered outside Finland.
- Finnish grant recipients were defined as successful NNF grant applicants.
- The number of Finnish attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a Finnish research institute.
- Novo Holdings A/S investments in Finland were defined as investments in companies with their headquarter located in the Finland.

Sources:

- Researchfish (NNF grant data)
 - Research publication collaborations
 - Company project collaborations
 - Publications
- NNF-Data Platform, NORMA and OMADA (NNF grant application data)
 - Applicants of Finnish origin
 - Co-applicants
 - Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2022
 - University rankings
 - Publication impact data
- Novo Holdings A/S
 - Investment data