



Report on research collaborations and investments in Germany

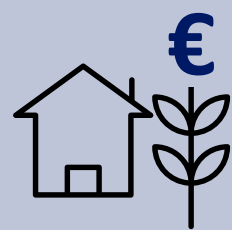
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Executive summary

Novo Holdings



Between 2019 and 2023, Novo Holdings invested in 3 companies based in Germany.



In 2023, the Novo Holdings portfolio included 4 German companies with a total value of 5.5 billion EUR.

Novo Nordisk Foundation



Between 2019 and 2023, the Novo Nordisk Foundation (NNF) financed 31 projects with German applicants, totaling EUR 36 million.



145 young German researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.

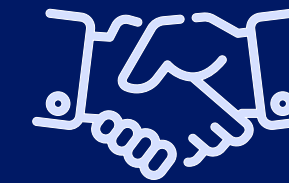


Between 2019 and 2023 the Novo Nordisk Foundation funded 292 PhDs, Postdocs, and other people in science in projects involving German applicants.

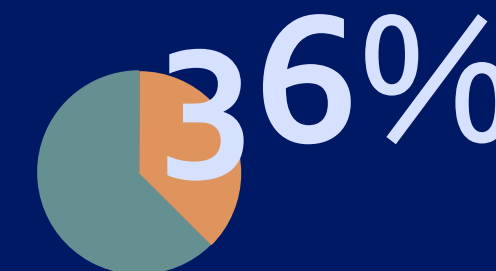
Grant recipients

96

The Foundation's grant recipients collaborates with many international project's partners, including 96 German based universities and university hospitals.



Between 2019 and 2023, NNF grant recipients collaborated with 64 unique German companies. 16 are in the biotechnology sector, 6 are in the hospital & health care sector, and 17 of the companies have fewer than 200 employees.



Between 2019 and 2023, German grant recipients have published 1813 journal articles. 36% of these are among the top 10% most cited in their field.

22/25

22 out of 25 top German universities collaborate with NNF grantees

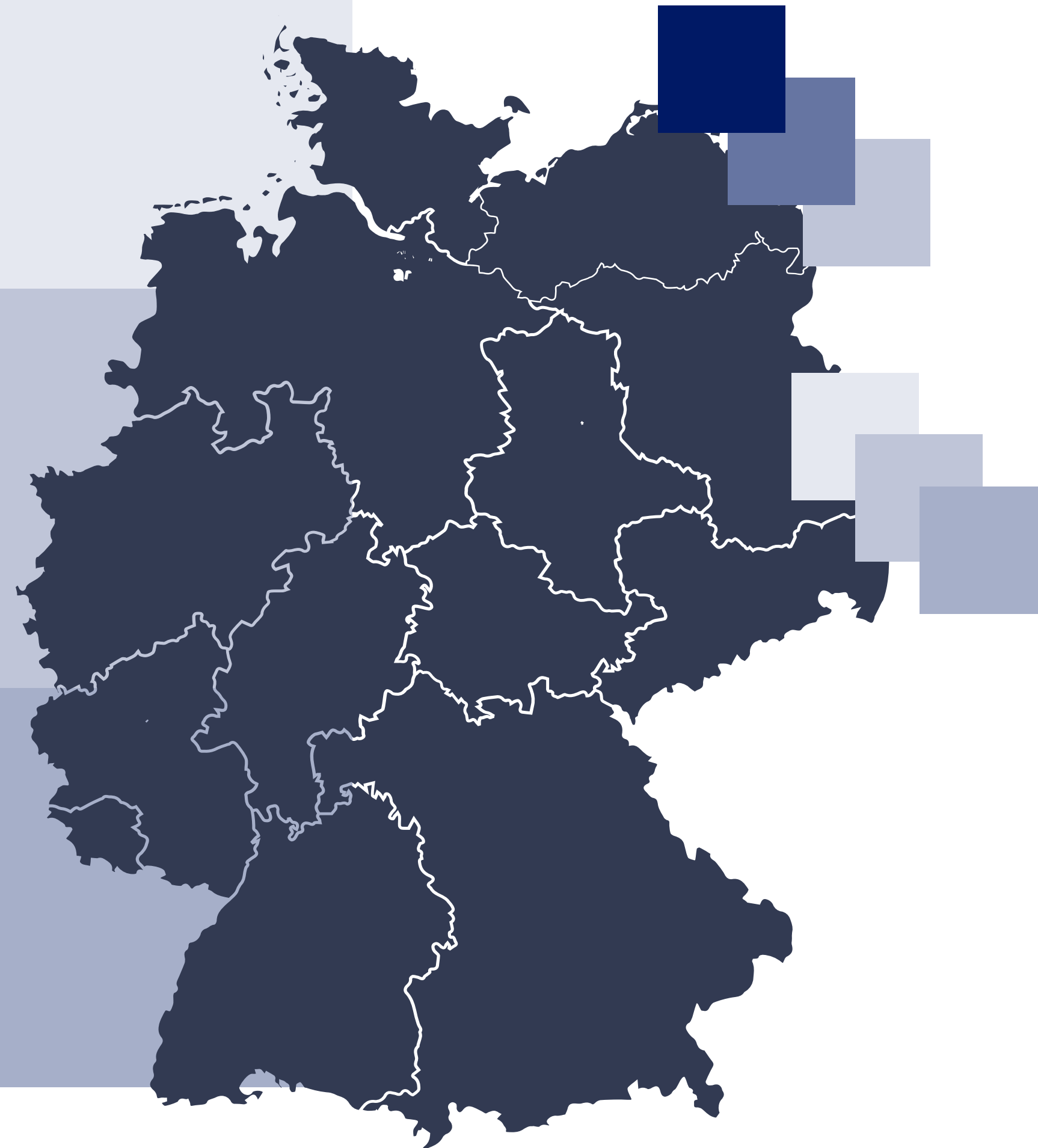
Introduction

This report is presented in two parts;

- Activities that Novo Nordisk Foundation (NNF) grant recipients have with institutions or organisations in Germany.
- An overview of Novo Holdings' investments in Germany.

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

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and German academic and industry 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



28.1% shares
76.9% votes



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

* 35% NN/NZ, 65% other investments

Focus areas

- Principal Investments
- Growth Investments
- Venture Investments
- Seed Investments
- Capital 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 is 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 and managing cardiometabolic diseases



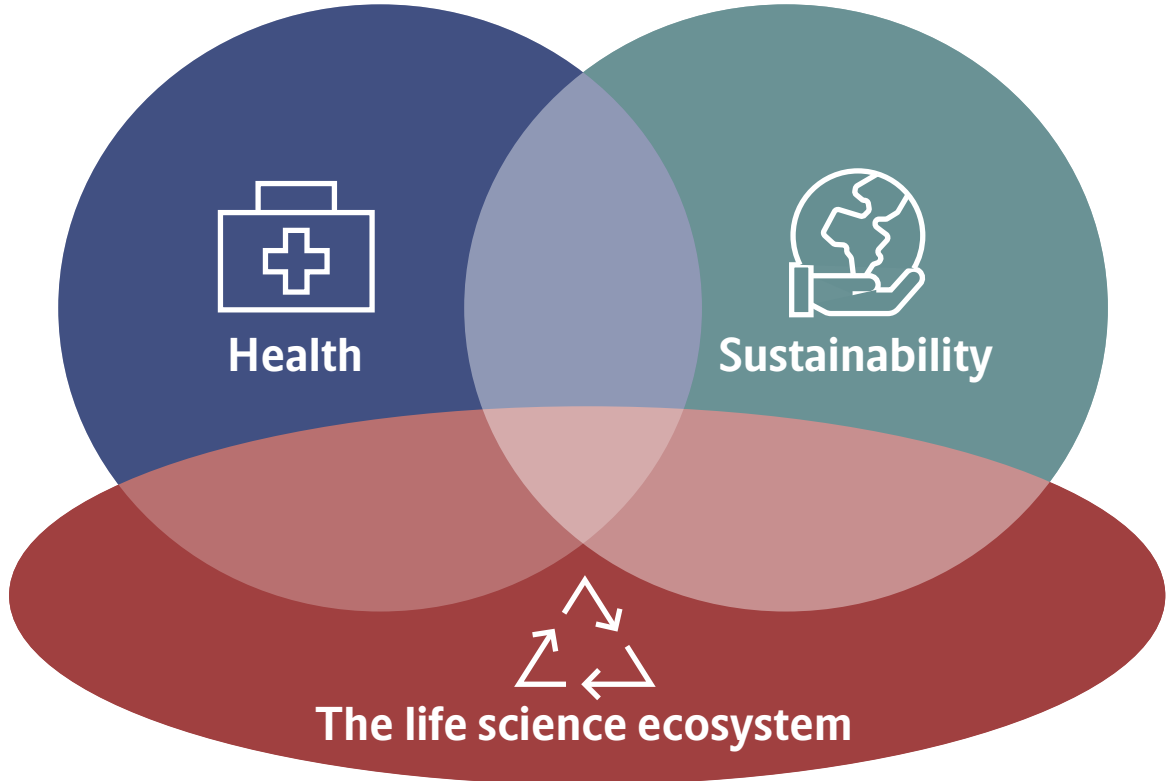
Theme 2: Decreasing the burden and threat of infectious diseases



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

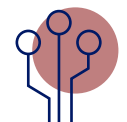


Theme 4: Supporting society in the green transition

Invest in scientific research, education and innovation to enable a world class life science ecosystem



Theme 1: Fundamental research



Theme 2: Enabling research infrastructures and technologies



Theme 3: Translational capacity and societal impact



Theme 4: Education and science capital



German academic and industry collaborations involving NNF grant recipients 2019-2023

31 projects funded by NNF include German researchers as applicants

The Novo Nordisk Foundation has in the last five years (2019-2023) funded 31 projects that have had 20 main applicants and 11 co-applicants from Germany. Co-applicants are members of the international group applying for a NNF grant. The total funding allocated to these projects is EUR 36 million.

The funded projects span research areas including Medical Science, Biotechnology, Patientcare, Natural- & Technical sciences, and Infectious Diseases. 25 projects were awarded in open competition, while 6 were awarded as a standalone grant.

- In 2023, **Region Zealand** and **Heidelberg University** received funding for the project titled: The JAK2V617F Mutation as a New Risk Factor for Cardiovascular Disease and Predictive Biomarker of Prognosis and Overall Survival.
- In 2023, **University of Copenhagen** and **Kiel University** received funding for the project titled: Releasing hidden symbiotic fungal chromosome plasticity to develop sustainable agriculture.



Fostering the development of research talent at all levels

In 2023 the Novo Nordisk foundation supported 22 PhDs, 20 Postdoc positions and 60 other people in science at German based research institutions through projects involving German 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, **145** young German 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

NNF Grant recipients' collaborations with German partners

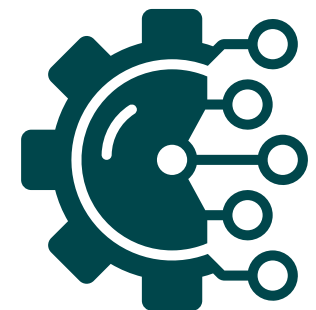
Between 2019 & 2023...



The Foundation's grant recipients have collaborated with many international project's partners, including **315** collaborations between Danish and German partners.



267 of those partners are universities and university hospitals.



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

Case stories

University and hospital collaborations

In 2023, Region Zealand and Heidelberg University (Heidelberg) received funding for the project titled: The JAK2V617F Mutation as a New Risk Factor for Cardiovascular Disease and Predictive Biomarker of Prognosis and Overall Survival. The project has received a grant of 11.42 million EUR and has the following description:

The JAK2V617F (JAK2) mutation is prevalent in patients with the myeloproliferative blood cancers(MPN), which are massively underdiagnosed (in DK about 10,000 Danish citizens with undiagnosed MPN). The JAK2 mutation is highly inflammatory and thrombogenic and accordingly associates with a huge cardiovascular disease (CVD) burden, implying a 12-fold increased risk of coronary heart disease. Molecular screening of "Populations at Risk of MPN" has the potential of identifying individuals with undiagnosed MPN, in whom elevated cell counts otherwise would have been considered "reactive".

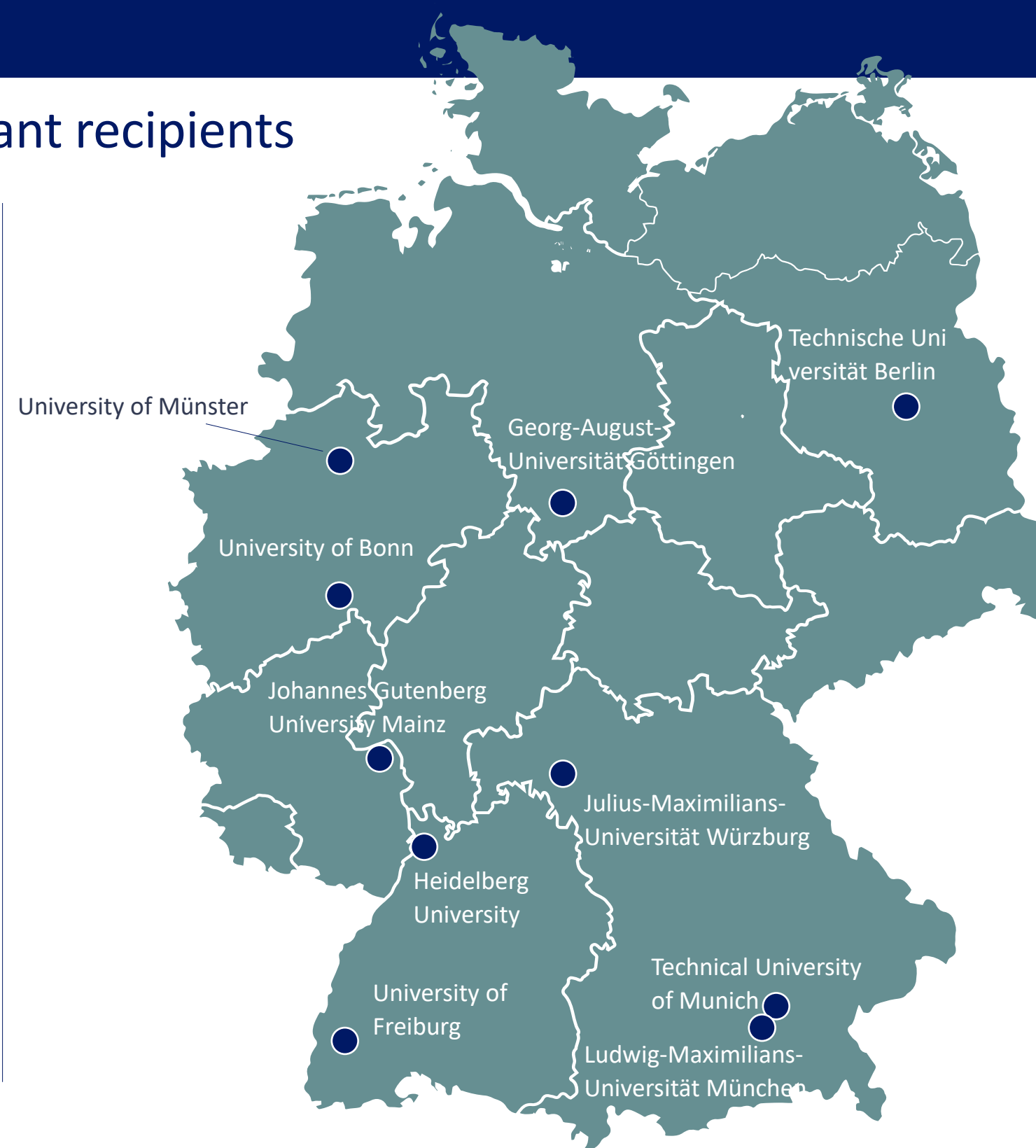
In 2023, University of Copenhagen and Kiel University received funding for the project titled: Releasing hidden symbiotic fungal chromosome plasticity to develop sustainable agriculture. The project has received a grant of 3.0 million EUR and has the following description:

In this project we aim to enhance sustainable agriculture by harnessing the potential of root-symbiotic entomopathogenic fungi to improve plant resilience and productivity. These fungi naturally occupy diverse ecological roles, acting as plant root symbionts, soil saprotrophs, and insect pathogens. The project focuses on the role of accessory chromosomes - genomic elements present in some fungal isolates but not others - that influence the fungal phenotype and their interactions with plants and insects.

NNF Grant recipients' collaboration with top German universities

9 out of 10 top German universities collaborate with NNF grant recipients

	Project collaborations	Publication collaborations
1 Humboldt-Universität zu Berlin	0	36
2 Heidelberg University	0	93
3 Freie Universität Berlin	1	21
4 Ludwig-Maximilians-Universität München	0	127
5 University of Göttingen	1	26
6 University of Würzburg	0	27
7 University of Freiburg	2	52
8 University of Potsdam	2	20
9 Goethe University Frankfurt	0	40
10 Hannover Medical School	0	0



Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2023

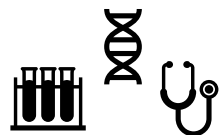
Publication collaborations between NNF grant recipients and German partners



Between 2019 and 2023, NNF grant recipients have co-authored **1813** publications with researchers located in Germany.



The most frequent national partner is Technical University of Munich with 149 publications, followed by Ludwig-Maximilians-Universität München with 127 publications, and Leipzig University with 96 publications



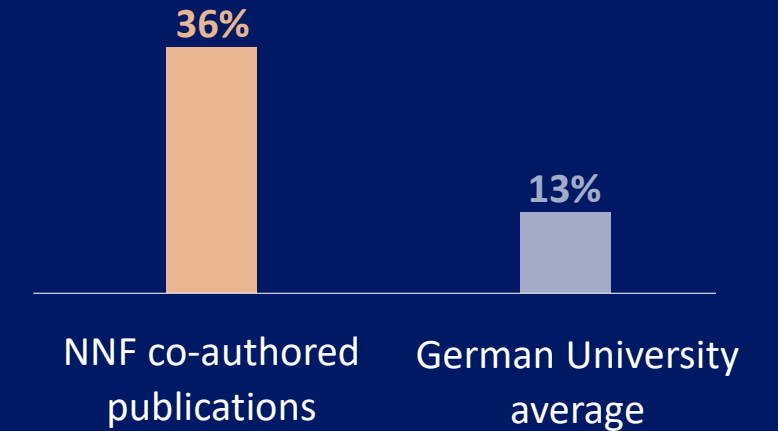
17% of the co-authored publications are within the research areas *Medicine and Biochemistry, Genetics & Molecular Biology*.



36% of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top German universities is 13%.

NNF grants contribute to research excellence

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



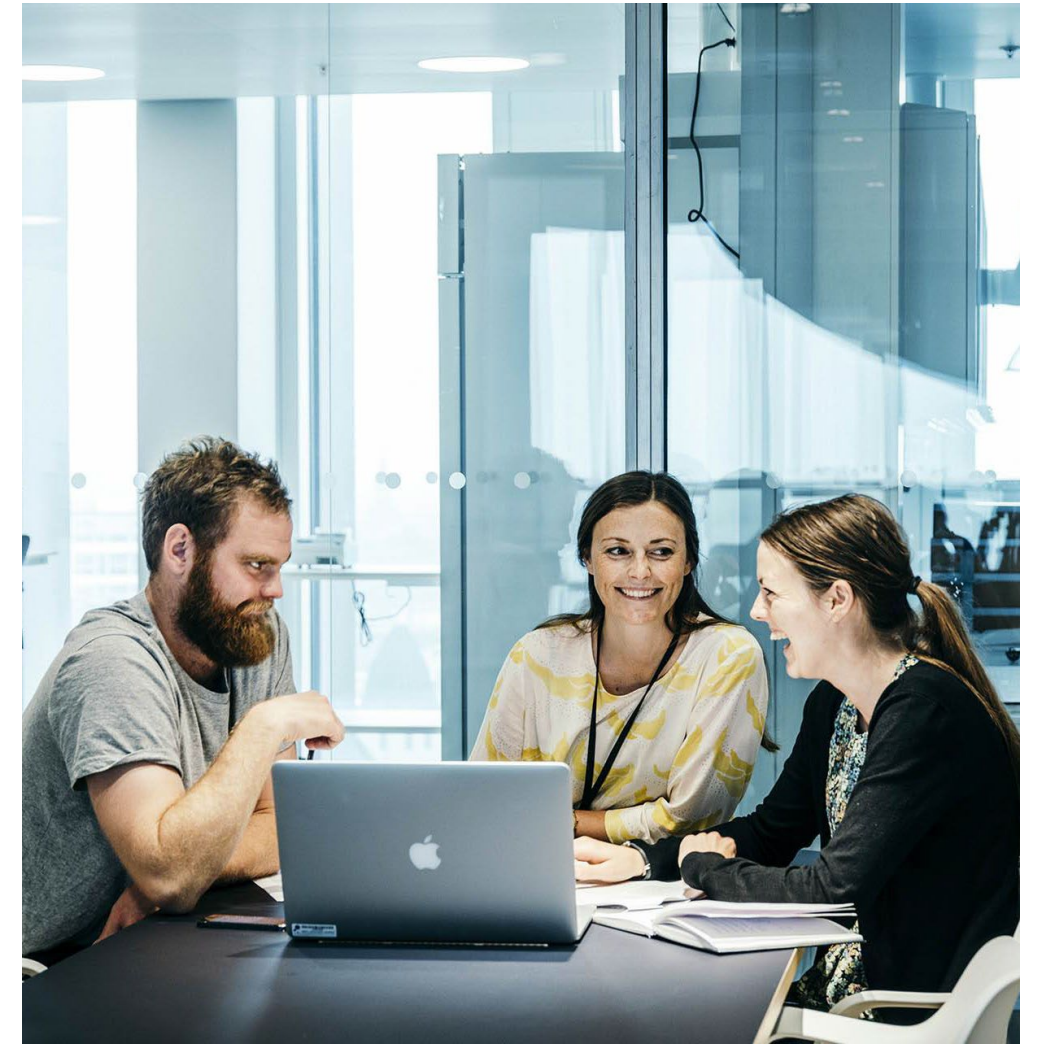
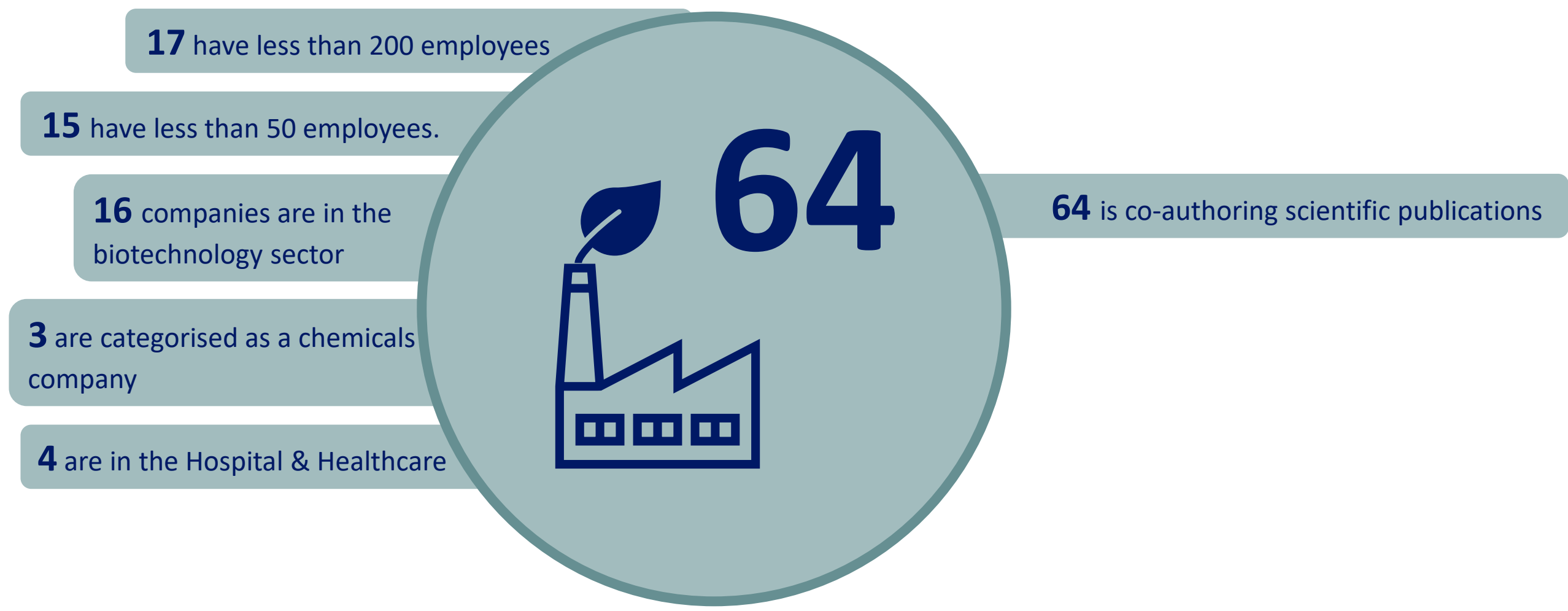
In 2021, Peer Bork was awarded the Novozymes Prize

Director of the Heidelberg site of the European Molecular Biology Laboratory, Peer Bork has been awarded the 2021 Novozymes Prize. He receives the price for developing groundbreaking, publicly available and integrative bioinformatic tools. By combining creativity and talent, Peer Bork has developed truly original tools, databases and web servers to collect and analyse the vast quantity of biological data now available with new technologies. His methods have since been used by hundreds of thousands of academic and industrial researchers for countless applications

The Novozymes Prize is awarded to outstanding research or technology contributions that benefit the development of biotechnological science for innovative solutions.

Researchers receiving grants from the Novo Nordisk Foundation collaborate with German companies

In total 64 unique companies collaborate with 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/>



Novo Holdings A/S in Germany

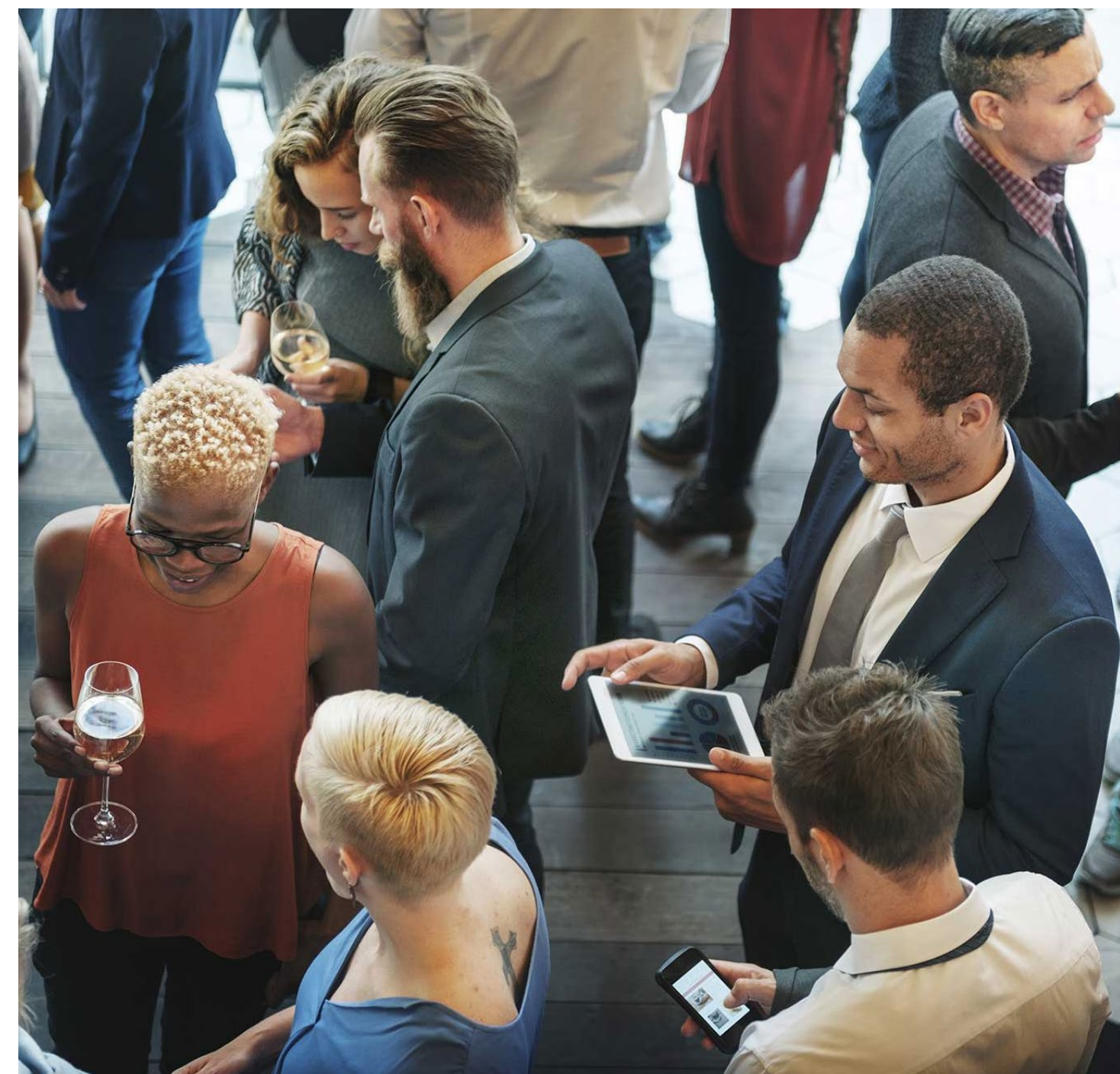
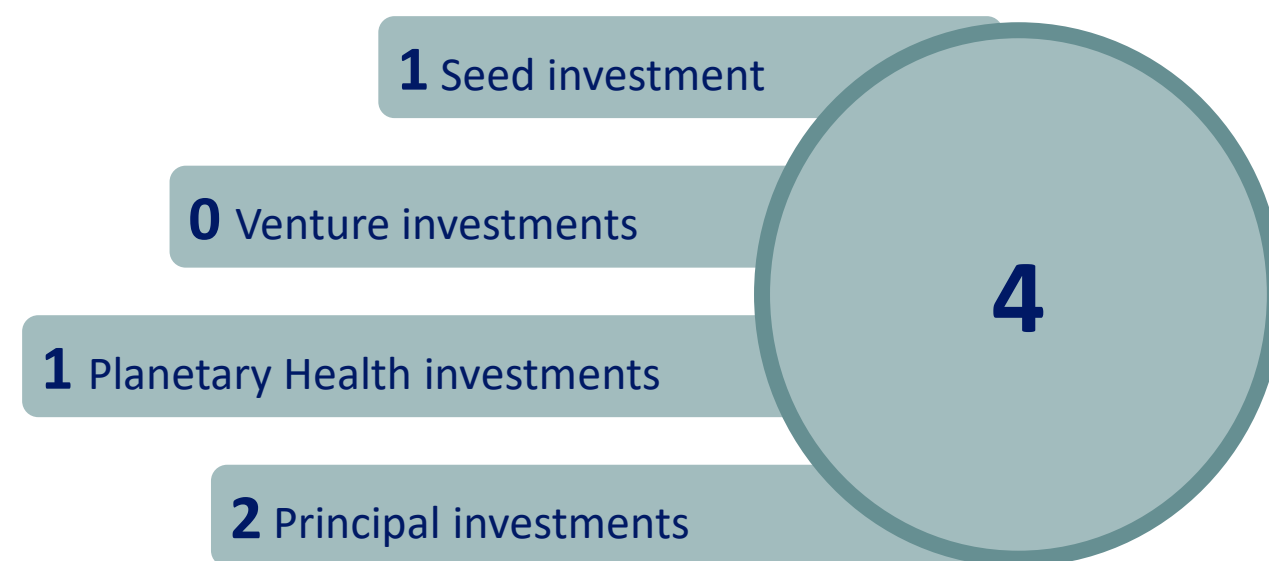
Our mission

Novo Holdings is to be a supportive owner of the Novo Group companies and to make a growing and positive impact on health, science and society by generating attractive long-term returns on the assets of the Novo Nordisk Foundation.

Novo Holdings A/S Investments in Germany

Novo Holdings A/S has in the period 2019-2023 invested in 3 **German companies**. In 2023, the portfolio included 4 companies, with a total value of EUR 5.5 billion.

Companies in the current portfolio

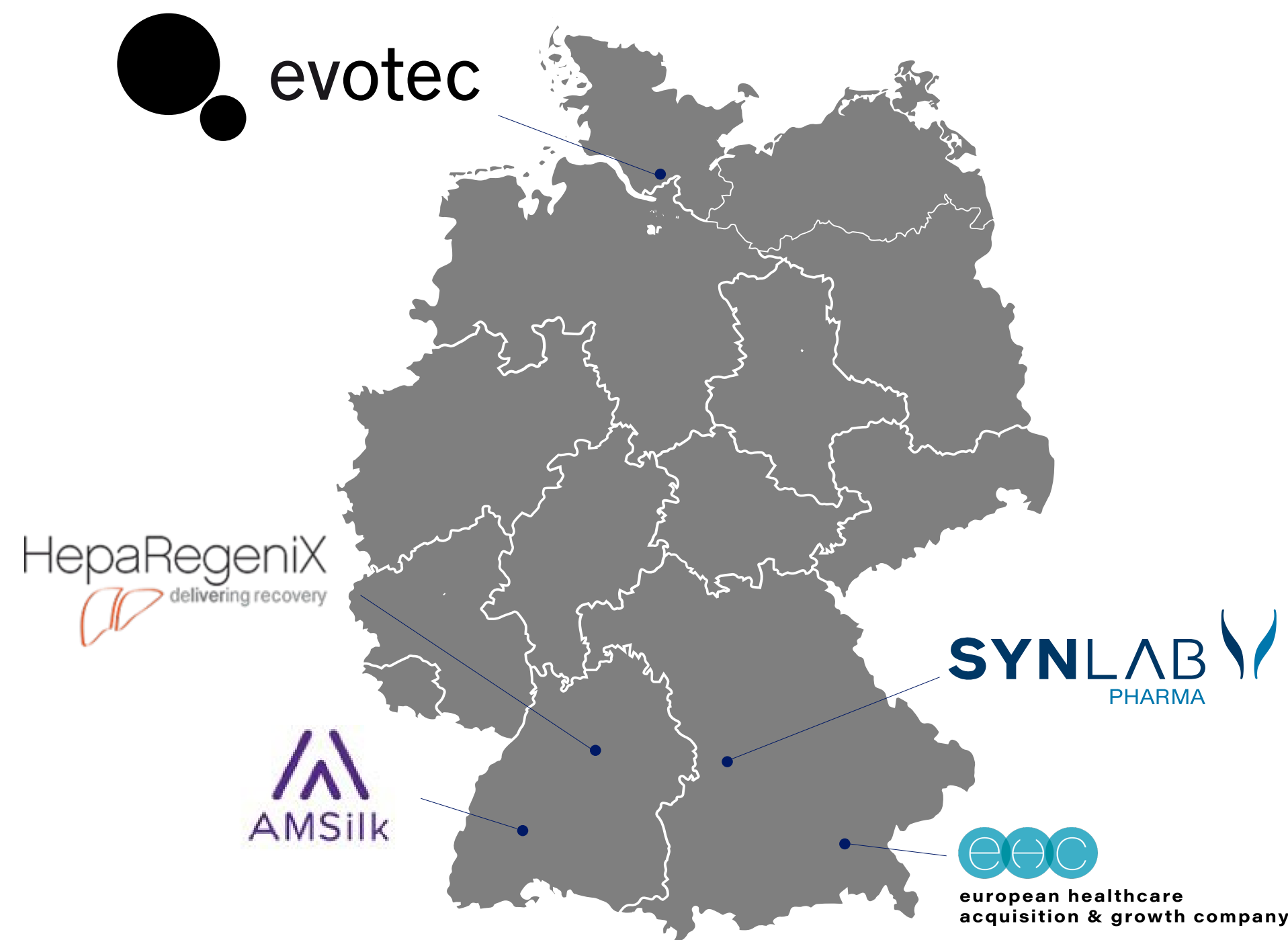


Novo Holdings A/S Investments in Germany

***Evotec** is a drug discovery company. By combining cutting edge research technologies with well-established drug-discovery tools the company progresses product ideas from target to clinic. Novo Holdings A/S also invest EUR 50 million to support Evotec's accelerated growth ambition.*

***AMSiik** is a world leader in supplying innovative high-performance bio-based silk materials with a vision to use its proprietary technology platform to lead the change to better and more sustainable products. Novo Holdings led a EUR 29 million series C investment in the company.*

***HepaRegeniX GmbH** is a preclinical stage company developing a novel therapy for the treatment of acute and chronic liver diseases. Novo Holdings teamed up with existing investors Boehringer Ingelheim Venture Fund GmbH (BIVF), the High-Tech Gruenderfonds, Coparion and Ascenion in a Series B financing round in excess of €11 million.*





Appendix and additional slides

Methods and sources

Methods:

- Collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one German collaborator/ German institute
- University ranking was based on the time period 2019-2023, across all sciences, with institutions with at least 100 publications, and based on the PP(top10%)
- Publications were defined as publications with at least one German and one Danish author
- German industry collaborators were defined as collaborations with companies registered in the Germany
- German research partners were defined as successful NNF grant applications with at least one German co-applicant
- The number of German attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a German research institute
- Novo Holdings A/S investments in Germany were defined as investments in companies with their headquarter located in Germany

Sources:

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