

# Report on research collaborations and investments in France

Country report on Danish-French relations in Novo Nordisk  
Foundation (NNF) grants and Novo Holdings investments

# Executive summary

- The Novo Nordisk Foundation (NNF) has awarded a total of € 0.6 million (DKK 4.2 million) to two projects involving French and Danish applicants.
- NNF grant recipients collaborate with six of the top 10 universities in France.
- NNF grant recipients have co-authored 467 publications with researchers located in France. 38% of these are among the top 10% most cited in their field.
- NNF grant recipients collaborate with 23 French companies. Two-thirds are in the biotechnology sector and half of the companies (48%) have less than 50 employees.
- Between 2014 – 2018, Novo Holdings invested €29 million in four French companies by follow-ons, open market purchases and other transactions.
- Since 2014, Novo Holdings has funded an average of one French company each year as part of its portfolio.
- Novo Holdings' French portfolio includes four companies with an overall value of €66 million.
- 0.3% of all Life Science investments made by Novo Holdings between 2014 and 2018 are in French companies.

# Introduction

The Novo Nordisk Foundation (NNF) is an independent Danish foundation with corporate interests.

The Foundation has two objectives:

- to provide a stable basis for the commercial and research activities of the companies in the Novo Group (Novo Holdings A/S, Novo Nordisk A/S and Novozymes A/S); and
- to support scientific, humanitarian and social causes.

Since 2014, NNF has invested USD 3.3 billion in science and society.

This report comprises two parts:

- Activities that NNF grant recipients have with institutions or organizations in France.
- An overview of Novo Holdings' investments in France.

The report showcases NNF's contribution to the French academic community and industry.

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and French academic and industry partners. Data in the presentation are based on activities between 2014 and 2018 (inclusive).

# An independent Danish foundation with corporate interests

## novo nordisk fonden

**Grants**

**Grants awarded in 2019:**  
USD 732 million  
(DKK 4.9 billion)

- Biomedical and health science research and applications
- Patient-centred and research-based care
- Life science research and industrial applications promoting sustainability
- Natural and technical science research and interdisciplinarity
- Innovation
- Education & outreach
- Social, humanitarian and development aid

Dividends

100% SHARES

## novo holdings

Investors in life science

Dividends

28.1% SHARES\*  
76.1% VOTES



25.5% SHARES\*  
72.0% VOTES



**Investments**

**Investment result in 2019:**  
USD 3.9 billion  
(DKK 26.0 billion)

- Principal investments
- Growth equity
- Venture investments
- Seed investments
- Financial investments

\*) Through Novo Holdings, the Foundation has A-shares in Novo Nordisk and Novozymes. A-shares have 10 times voting power per share

## Our vision

The Novo Nordisk Foundation's *vision* is to contribute significantly to research and development that improves the lives of people and the sustainability of society.

## Our mission

- › To enable Novo Nordisk A/S and Novozymes A/S to create world-class business results and contribute to growth
- › To develop knowledge-based environments in which innovative and talented people can carry out research of the highest quality and translate discoveries into new treatments and solutions
- › To inspire and enable children and young people to learn

# Case stories

## Impact on patient treatment

A collaboration between Copenhagen University Hospital and **Assistance Publique – Hôpitaux de Paris** has made it possible to include the needed number of patients in a clinical trial looking at Resveratrol, an antioxidant commonly found in grapes, raspberries and dark chocolate, as a treatment for mitochondrial myopathies and fatty acid oxidation defects trials. Metabolic myopathies are rare diseases, and often the number of patients required to complete a treatment study are not available in Denmark.

## A university collaboration

A collaboration between the **Pasteur Institute** and **Copenhagen University Hospital** discovered how genes involved in severe malaria can be silenced, and resulted in a publication published in Nature. Most of the research was carried out by researchers at the Pasteur Institute, while their Danish partners contributed by generating critical reagents for the study. The discovery may lead to new strategies for reducing malaria pathogenesis.



# French academic and industry collaborations involving NNF grant recipients 2014-2018

## Two projects funded by NFF include Danish and French researchers as co-applicants

NNF has in the last five years (2014-2018) funded **2** projects involving **2** co-applicants from France. Co-applicants are members of the international group applying for a NNF grant. The total funding allocated to these projects is DKK **4.2 million** (€ 0.6 million).

The funded projects span research areas such as Endocrinology & Metabolism and Biomedicine. Both projects were awarded in open competition.



Since 2014, **50** young French researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.

*“An opportunity that will facilitate transatlantic training for PhD students and postdocs”*

*NNF applicant, 2015*

# NNF Grant recipients' project collaboration with French partners

Between 2014 & 2018:



NNF grant recipients have been collaborating with many international project partners on projects, **224** of which are collaborations between Danish and French partners.



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



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

# NNF Grant recipients' collaboration with top French universities

6 out of 10 top universities collaborate with NNF grant recipients

- 1 École Normale Supérieure, Paris
- 2 Université Paris Diderot
- 3 Paris-Sud University
- 4 Paris Descartes University
- 5 École Polytechnique
- 6 Sorbonne Université
- 7 Université Nice Sophia Antipolis
- 8 Université Grenoble Alpes
- 9 Université Paris-Est Créteil Val de Marne
- 10 Université Toulouse III - Paul Sabatier

Source: Novo Nordisk Foundation based on data from the Leiden Ranking 2019



# Publication collaborations between NNF grant recipients and French partners



Between 2014 and 2018, NNF grant recipients have co-authored **467** publications with French-located researchers.



The highest number of French partners come from the national public research institutions INSERM (210 publications) and CNRS, Centre National de la Recherche Scientifique (102 publications). Among the universities we find Sorbonne Université (50 publications) and Université Paris Diderot (44 publications).

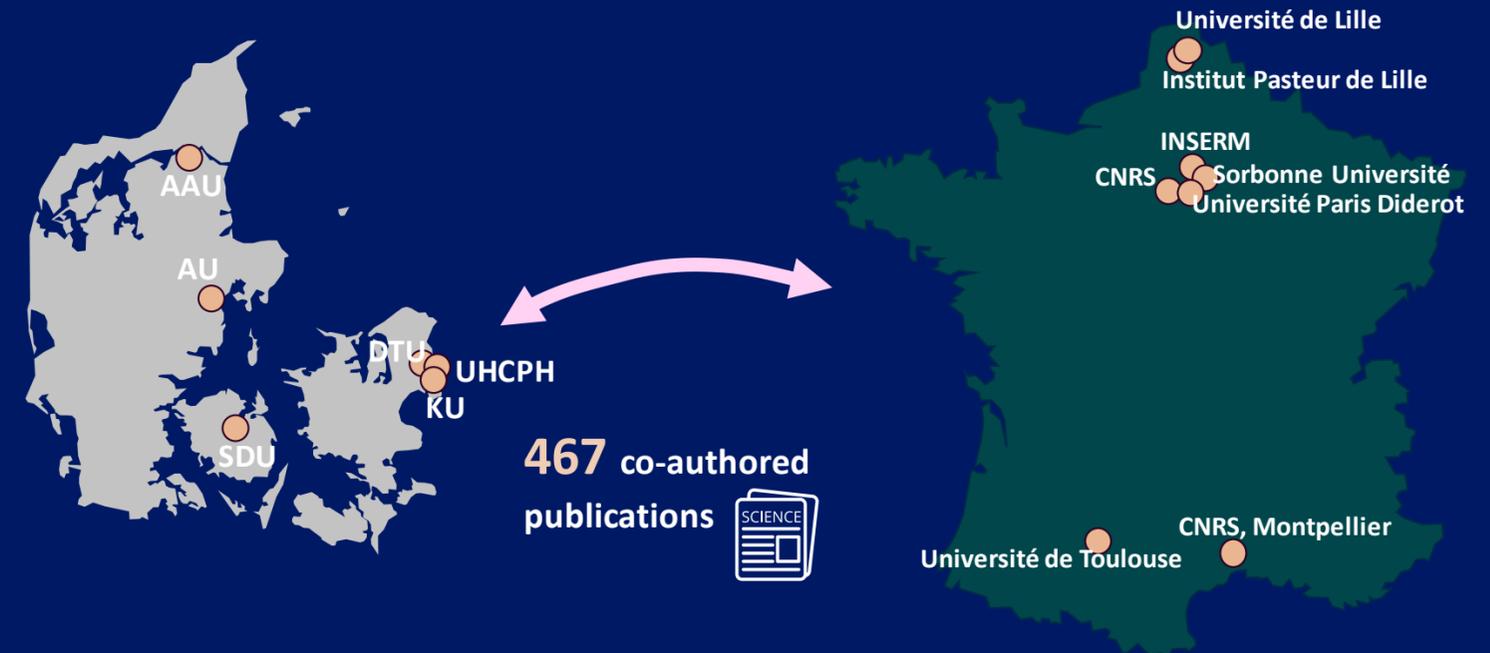


**67%** of the co-authored publications are within the research areas Medicine and Biochemistry, Genetics & Molecular Biology.



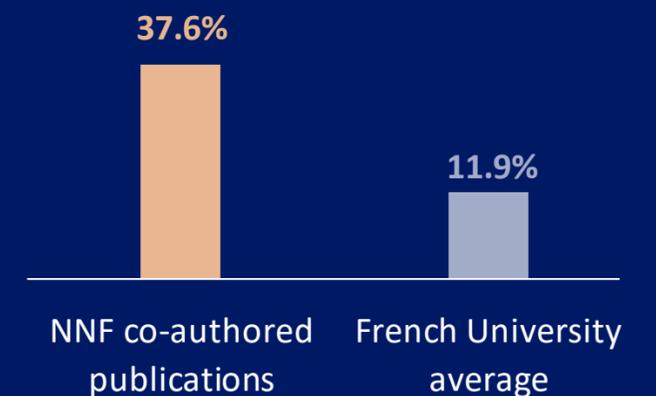
**38%** of the co-authored publications are within the top 10% most cited publications in their research field. The national average among the French top universities is 12%.

## Selected links between France and Denmark



## 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



# NNF grant recipients' collaboration with small and medium-sized French companies in the biotechnology sector

**23** companies located in France collaborate with NNF grant recipients either on formalized research projects (4) or by co-authoring scientific publications (19).

**18** companies have less than 250 employees, and 48% have less than 50 employees.

**14** companies are in the biotechnology sector.

**3** are categorised as pharmaceutical companies.

**6** are either in the medical device, IT, consultancy, or hospital & healthcare sector.





# Novo Holdings A/S in France

## 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 France

In the period 2014-2018, Novo Holdings A/S has invested €29 million in French companies. In 2019, this number increased by €3 million to €32 million in a total of 4 companies with an overall value of €66 million.

0.3% of the life science investments made by Novo Holdings A/S in Europe is in French companies.

## Companies in the current portfolio





# Appendix and additional slides

# Methods and sources

## Methods:

- Collaborations were defined as collaborations funded by NNF with at least one French collaborator/French institute.
- University ranking was based on the time period 2014-2017, 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 French and one Danish author.
- French industry collaborators were defined as collaborations with companies registered in France.
- French research partners were defined as successful NNF grant applications with at least one French co-applicant.
- The number of French attendees at the Copenhagen Bioscience Conferences were defined as applicants and attendees registered with a French research institute.
- Novo Holdings A/S investments in France were defined as investments in companies with their headquarter located in France.

## Sources:

- Researchfish (NNF grant data)
  - Research collaborations
  - Company collaborations
  - Publications
- NORMA and OMADA (NNF grant application data)
  - Co-applicants
  - Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2019
  - University rankings
  - Publication impact data
- Novo Holdings A/S
  - Investment data