

November 2020

# The Novo Nordisk Foundation

Funding opportunities within the Natural and Technical Sciences

# Agenda

- **Introduction to the Foundation and the Nat-Tech focus areas by Lene Oddershede**
- **Open competition instruments in Nat-Tech:**
  - The NERD Programme and Project grants in natural and technical sciences
  - The Research Infrastructure Programme
  - The Interdisciplinary Synergy Programmes
  - The Data Science Initiative
  - Brief overview of other Nat-Tech calls



# The Nat-Tech team



Lene Oddershede

Senior Vice  
President

Physics



Morten Bache

Senior Scientific  
Lead

Technical  
sciences



Kasper Nørgaard

Senior Scientific  
Manager

Chemistry



Kamilla Nørregaard

Scientific Manager

Biophysics /  
interdisciplinary



Anne-Sofie Tafdrup

Grant Specialist



Signe Rømer Holm

Grant Manager

# It began with insulin



# Our vision

With Denmark as its center of gravity, the Foundation's vision is to contribute significantly to research and development that improves the lives of people and the sustainability of society.



# The Novo Nordisk Foundation is an independent Danish enterprise foundation

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

ново нордиск фонден

ново нордиск фонден

Dividends

100% SHARES

ново holdings  
Investors in life science

Dividends

28.1% SHARES\*  
76.1% VOTES



25.5% SHARES\*  
72.0% VOTES



**Grants**

**Awarded in 2019:**  
DKK 4.9 billion (EUR 655 million)  
**Paid out in 2019:**  
DKK 3.6 billion (EUR 483 million)

Scientific research  
Diabetes treatment  
Innovation  
Education & outreach  
Humanitarian and social causes

**Investments**

**Investment result in 2019:**  
DKK 26 billion (EUR 3.5 billion)

Principal Investments  
Growth Investments  
Venture Investments  
Seed Investments  
Financial Investments

# Our objectives

## Corporate objective

- To provide a stable basis for the commercial and research activities of the Novo Group companies\*.

## Grant-giving objectives

- To support physiological, endocrinological, metabolic and other medical research,
- to support Danish research hospital activities within diabetes, and
- to support **other scientific**, humanitarian and social purposes.



# Roles in Denmark



- Supplement to public funding of research
- Privately controlled
- Can be agile, long-term, strategic, risky

- Responsible for public research
- Politically controlled



# Grant-awarding focus areas and long-term objectives

## Biomedical and health science research and applications



Enable people to live healthier and better lives by facilitating research that advances knowledge of human health and disease, solves health challenges and develops the health care system.

## Patient-centred and research based care



Make Denmark a global leader in delivering patient-centred and research based care for people with diabetes and facilitate the development of patient-centred and research based care within diabetes co-morbidities and other endocrine disorders.

## Life science research and industrial applications promoting sustainability



Act for and inspire development of a more sustainable world by supporting research that translates to life science solutions to benefit people and the environment.

## Natural and technical science research and interdisciplinarity



Catalyse natural and technical science research, particularly in fields with potential interdisciplinary application to the life and health sciences and industrial biotechnology.

## Education, outreach and innovation



Support general science education and cultivate scientific and technical competencies and engagement.

To benefit people, promote life science ecosystems that translate scientific discoveries into products and solutions and drive growth.

## Social, humanitarian and development aid

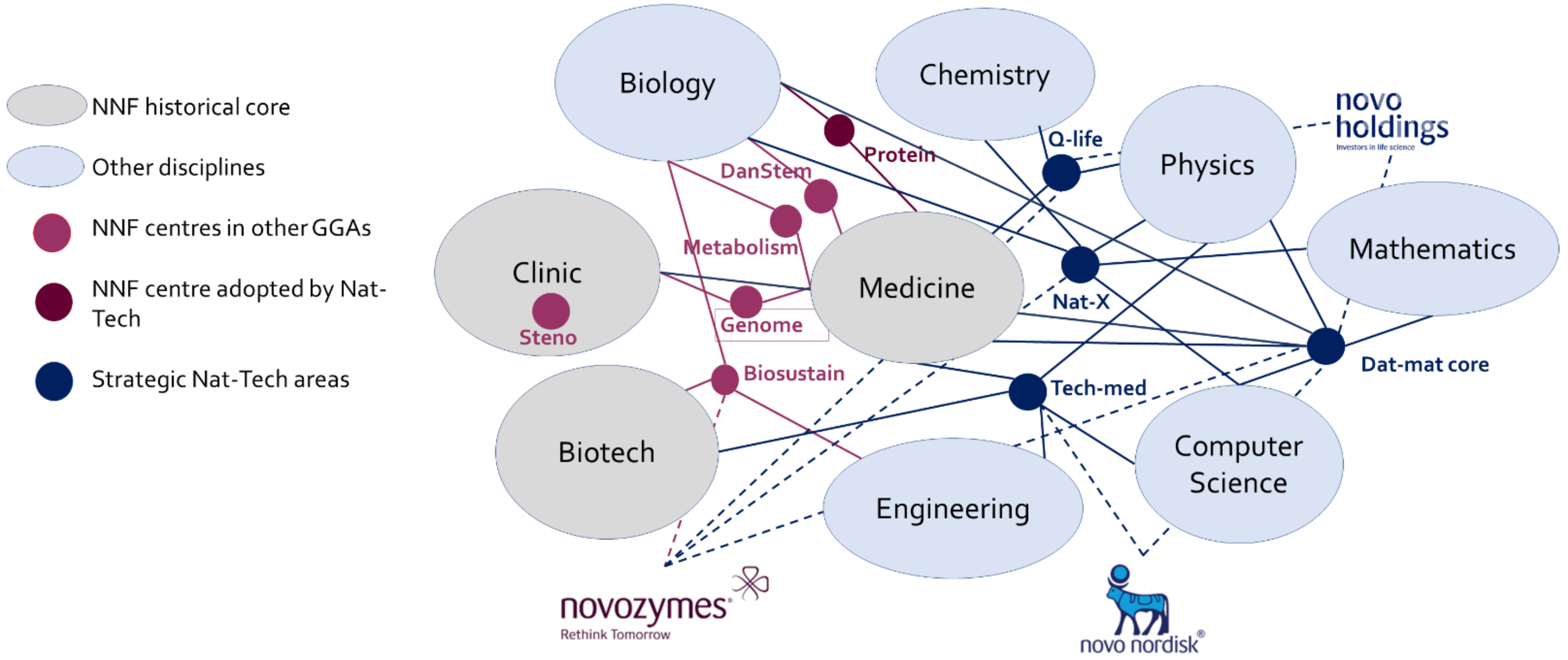


Improve the lives and prospects of vulnerable children and young people through health, education, developing competencies and other interventions.

# Grant payout ambition 2023



# Positioning of Nat-Tech within the NNF landscape



# Nat-Tech strategic focus areas

Within our grant awarding scope, we enable research, establish research environments, develop research talent, establish international and interdisciplinary collaboration, and develop cutting-edge infrastructure.



## Nat-Tech key strategic themes 2019-2023:

- 1) Interdisciplinary Research.** Join forces between the classical disciplines to enable breakthroughs in understanding the mechanisms governing life, health and biotechnology.
- 2) Quantum technologies applied in the life sciences.** Solve complex and important problems in biology, chemistry and medicine through the development and realization of quantum technologies.
- 3) Data Science.** Develop tomorrow's ground-breaking algorithms and technologies for understanding and handling big data with application in AI, biotechnology or biomedicine.
- 4) Technical research with potential application to medicine.** Transform tomorrow's therapies and diagnostics and progress human health by developing technologies for potential use in the medical sciences.

# Research grants

- open competition

Stanford Bio-X  
postdoc fellow

NERD

Project grants

Start Packages

RECRUIT

## Data Science Initiative

Challenge Programme

Interdisciplinary Synergy Programme



Ph.d.- og post.doc.- fellowships

Research Leader Programs



Collaborative programmes

## Research Infrastructures

# Nat-Tech Programmes in open competition



# Research supported within the natural and technical sciences

Fundamental research within the natural and technical sciences, including, e.g., physics, chemistry, mathematics, computer science and technical sciences.

Applications must explicitly describe how the outcome of the project may have potential future applications in the life and health sciences or in biotechnology.

Such potential applications may be either on the short term or on the long term, possibly on timescales longer than the project period.

## Examples of research areas outside our awarding scope

- Areas covered by other NNF grant giving areas:
  - biotechnology
  - bioscience and biomedicine
  - endocrinology and metabolism
  - clinical and translational medicine.
- Cosmology
- Zoology
- Projects that are primarily retrospective or primarily of historical value fall outside the awarding scope.

# NERD programme

*New Exploratory Research and Discovery*

## Hourglass problem

In general, sufficient funding is available for younger researchers and for very well-established researchers, however, the middle group, typically at the associate professor level, experience difficulties in obtaining funding.



## Leaky pipeline

The well-documented phenomenon that increasingly fewer female researchers exist as one ascends the academic career ladder.



## Matthew effect

The tendency to fund scientists who are already successful, implying that too much funding is given to too few scientists. The Matthew effect favours conservative research and leaves only little room for truly novel and disruptive ideas.





# NERD programme

## *New Exploratory Research and Discovery*

**Deadline: 28 January 2021**

Supporting creative, daring and ambitious researchers within the natural and technical sciences at any career stage after obtaining the PhD degree.

- Project must describe how its outcome has potential application within life sciences or biotechnology.

- Up to DKK 14 million (experimental)
- Up to DKK 10.5 million (theoretical)
- Up to 7 years project duration
- Grant portfolio cap:  
DKK 4.0 million/year as PI (in first funding year)

### Two stage evaluation process:

- I. **Anonymous:** Evaluators score project proposal without access to applicant's CV
- II. **Top ranked** projects are chosen for further review with access to applicant's CV

#### Main criteria:

#### **Scientific quality, creativity, novelty, ambition and feasibility of the project**

- Quality of project is weighted over bibliometrics of the applicant
- Current performance of applicant is evaluated relative to career stage
- Level of commitment to the project can be taken into consideration

# Project Grants in the Natural and Technical Sciences

The call supports fundamental research at a high international level within the natural and technical sciences, including, e.g., physics, chemistry, mathematics, computer science and technical sciences.

- DKK 1-3 million for 1-3 years (4+4 PhD allowed)
- Grant capital: DKK 60 million in 2021
- 1-stage application and evaluation procedure
- Evaluation criteria: quality, novelty, and feasibility of the project as well as the merits and commitment of the applicant.
- The application must explicitly describe how the outcome of the project may have potential future applications in the life sciences, health sciences or in biotechnology.

## 2020 Grant announcements:

Early December

novo nordisk fonden

## Tentative dates for 2021:

Call opens: June 2021

Deadline: Early September 2021

# Research Infrastructure Programme

## OBJECTIVE:

- Establish state-of-the-art research infrastructures to achieve excellence in research and innovation
- Ensure that the infrastructure is continuously developed and maintained, after its implementation.
- Ensure qualified technical assistance to support the use of the infrastructure

- 1-stage application process
- Evaluated by and internal NNF committee and external expert peer review
- Expected to open Fall 2020 and have deadline February 2021

*Only research within Nat-Tech's areas of support is funded in the 2021 call*

- Grant budget: DKK 5-25 million up to 5 years
- Programme budget: DKK 50 million



# Research Infrastructure Programme

## WHAT IS IMPORTANT IN THE EVALUATION:

- scientific need for the infrastructure
- state-of-the-art of the requested equipment
- Business plan and governance for the infrastructure, including expected use and maintenance
- plan for accessibility to the infrastructure
- Applicant and 3-5 core-users
- scientific and managerial qualifications of the applicant(s).
- **Alignment with Nat-Tech's areas of support**

## WHAT CAN YOU APPLY FOR:

### Equipment:

- Acquisition and delivery
- Installation and minor renovation if necessary

### Running costs:

- Consumables, service, maintenance
- Storage and analysis of data

### Staff:

Full-time specialist, to keep the facility and equipment running, to carry out services, and as gate-keeper and instructor for new or external users

**Open access** is strongly encouraged, including users from other academic institutions and industry!

Nat-Tech Programmes  
with interdisciplinary  
focus in open  
competition

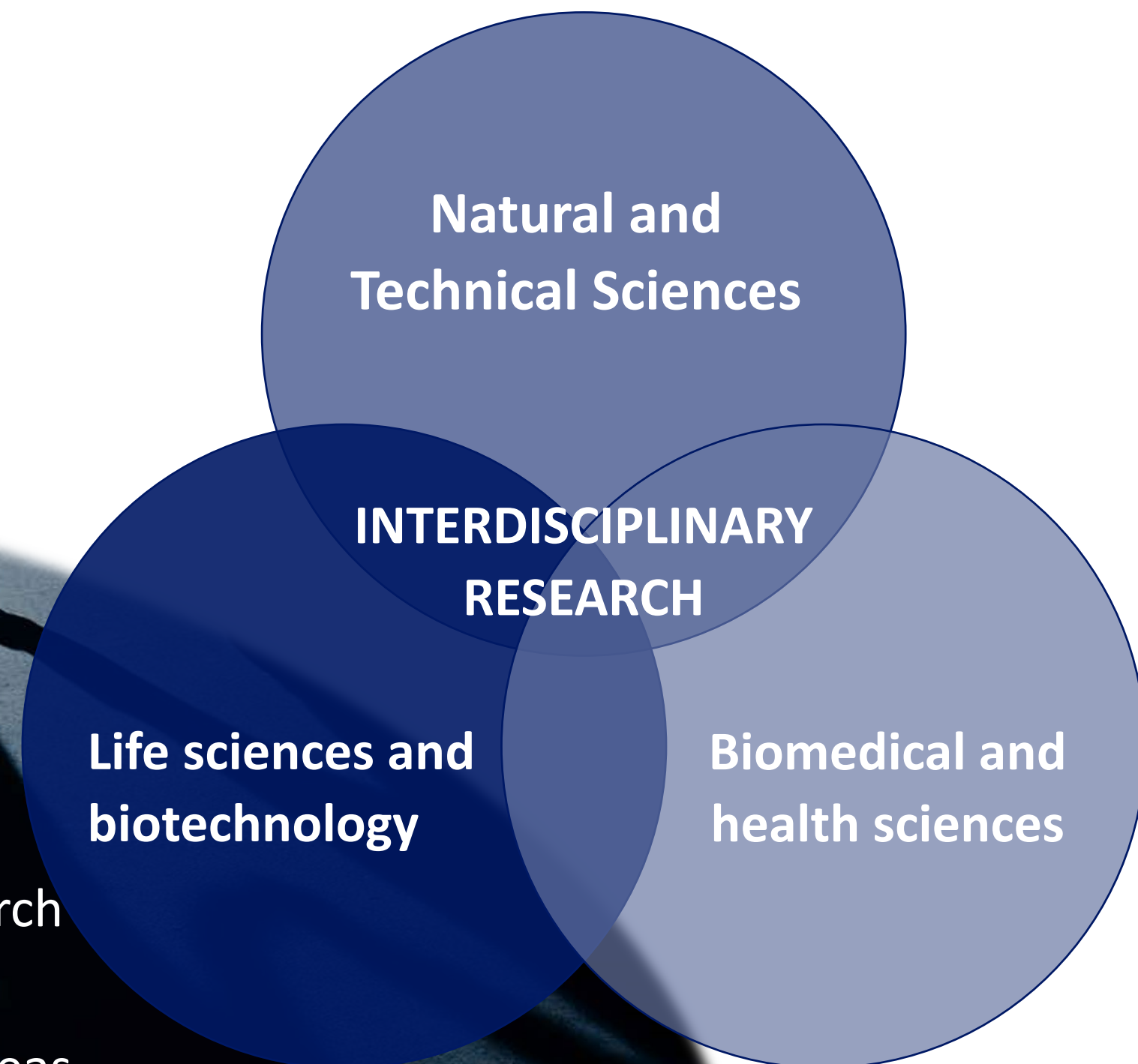


# Interdisciplinary Synergy Programmes

## OBJECTIVE:

To support research projects across disciplines, organizations and national borders, in order to resolve complex interdisciplinary challenges.

- Pursue creative and novel, high-risk/high-gain interdisciplinary research ideas
- Provide long-term support of such novel interdisciplinary research ideas
- Break down or overcome the barriers that exist between different disciplines
- To act as a *'kick starter'* for a new interdisciplinary research culture in Denmark
- Strengthen and internationalize Danish research



# Interdisciplinary Synergy Programmes

## Interdisciplinary Synergy Programme (ISP):

- Grant budget: **DKK 15 million over 4 years**
- Programme budget: DKK 75 million
- Application deadline: **June 2021**

## Exploratory Interdisciplinary Synergy Programme (XISP):

- Grant budget: **DKK 5 million over 2 years**
- Programme budget: DKK 50 million
- Application deadline: **August 2021**

**Call opens: April 2020**

## ELIGIBILITY

- Novel research idea where an interdisciplinary challenge is at the centre
- High-risk/High-gain project
- Main applicant anchored in Denmark (>50%)
- 1-3 interdisciplinary co-applicants that contribute scientifically in the project and has a financial share (can be from any research field, institution, and country)
- XISP is aimed towards projects in **early-stage attempts** to test the idea
- ISP is ideally founded on **early data** showing feasibility of the idea

## ASSESSMENT CRITERIA

- Quality, creativity, idea and novelty
- HIGH-RISK/HIGH-GAIN
- The interdisciplinarity of the applicants and the expected synergy
- Qualifications of the applicant(s) for leading a complex project

# NNF Data Science Initiative – DKK 510 million dedicated to data science research in 4 pillars



## Collaborative Research Programme (180 million DKK)

Grants for collaborative projects rooted in data science within the Foundation's core scientific areas.



## Research Infrastructure Programme (80 million DKK)

'Packages' of funding for shared computers, hardware, personnel (staff positions), data collection, curation and management.



## Investigator Grants (150 million DKK)

Support independent group leaders at different career stages (Emerging, Ascending, Distinguished)



## Data Science Academy (app. DKK 100 million, under development)

Educational courses & training, Symposia & networking, PhD & post-doc scholarships, Visiting Professorships, Vocational Training

## Open-competition programme

DKK 410 million to be awarded in 2020, 2021 and 2022

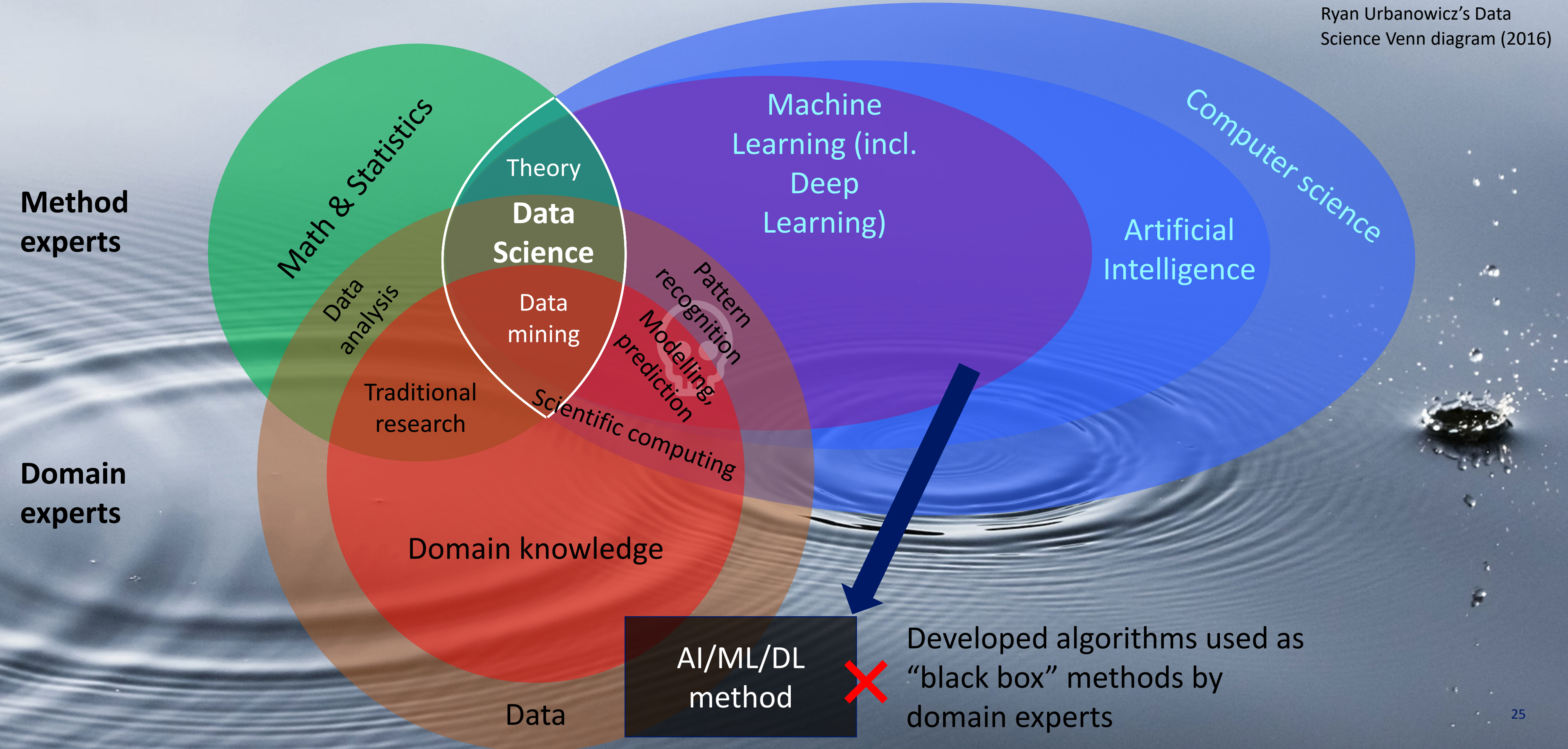
Committee for Data Science

## National network



# NNF Data Science Initiative

Ryan Urbanowicz's Data Science Venn diagram (2016)



# NNF Data Science Initiative – Research themes

The Data Science Initiative supports

- **Development of new algorithms, methods and technologies** within data science, artificial intelligence (incl. machine learning and deep learning), data engineering, data mining, statistics, applied math, computer science, big data analytics, etc.
  - For such projects, it is important that the applicants argue convincingly for **potential application and impact within life sciences and/or biotechnology**.
- **Applications of data science within the Foundation’s core scientific areas**
  - Such projects must describe and explain the **novelty and impact of their data science approach**, be it development of novel methods or novel applications of existing methods.

Projects where the primary focus is on financial or insurance data, fraud detection, advertisement, social media, social science or humanities, security and mass surveillance, defence, gaming, etc. are considered outside of scope and will not be considered for funding, unless the applicants can convincingly argue for relevance and potential impact within the Foundations scientific focus areas.

## NNF core scientific areas

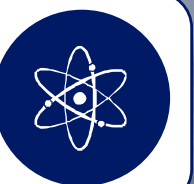
Biomedical and health science



Life science and industrial applications promoting sustainability



Natural and technical science research and interdisciplinarity



# The NNF Data Science Initiative – activities in 2021

## MOTIVATION

Access to skilled data science resources is key to future growth and excellence across the Danish research- and innovation environments, healthcare sector, and life science industry.

## PURPOSE

- Support Data Science research and education in Denmark
- Increased educational output of candidates
- University faculty retained in academia
- Recruitment of foreign talent to Denmark



### Collaborative Research DKK 60 million in 2021

Grants for collaborative projects involving data science within the Foundation's strategic focus areas.

#### Grant budget:

- Up to 25 million DKK over 5 years
- Consortia with up to 4 departments / institutions

Call opens December 2020 with application deadline in March 2021



### Research Infrastructure DKK 40 million in 2021

'Packages' of funding for shared computers, hardware, personnel (staff positions), data collection, curation, and management.

#### Grant budget:

5-15 million DKK over 5 years

Call opens December 2020 with application deadline in May 2021



### Investigator Grants DKK 60 million in 2021

Support of excellent independent data science group leaders at different career stages

- Emerging (Assistant prof level)
- Ascending (Associate prof level)
- Distinguished (Full prof level)

#### Grant budget:

Up to 10 million DKK over 5 years

Call opens December 2020 with application deadline in March 2021



### Data Science Academy

Announced 2021, budget TBD

A national network within data science is being explored to further strengthen collaboration and knowledge sharing

#### Activities:

- Educational courses and training
- Symposia and networking events
- PhD & post-doc scholarships
- Visiting Professorships
- Vocational training

# Brief overview of other Nat-Tech calls



# NNF Challenge Programme

**PURPOSE:** To overcome specific challenges in health, technology and environment – **thematic calls**

- Grant budget: DKK 30-60 million over 6 years, unites 2-4 research groups in a collaborative effort and a centre-like setup.
- Theme notification for 2022 will be announced Summer 2021 with application deadline Fall 2021

Themes for 2021 (closed 29 October 2020):

*Theme 1:  
Smart nanomaterials  
for applications in  
life-science*

*The challenge: is to develop functional or responsive nanomaterials that demonstrate novel or superior properties for applications within life science and/or biotechnology.*

*Theme 2:  
Proteins for  
tomorrow's food*

*The challenge: to understand and modulate the properties of plant and microbial proteins and to understand their interplay with other ingredients in the food matrix with the purpose of substituting animal proteins.*

*Theme 3:  
Mathematical  
modelling of health  
and disease*

*The challenge: to develop quantitative mathematical models with predictive power that can significantly progress our understanding of the fundamental processes governing health and disease.*

# RECRUIT – for international recruitment in Nat-Tech areas

## OBJECTIVE:

To strengthen Danish universities in the international competition of recruiting the most talented or leading researchers from abroad within the natural and technical sciences.

- Grant budget:
  - Up to DKK 15 million over 7 years for a position at the assistant professor level,
  - up to DKK 25 million over 7 years for a position at the associate professor level,
  - up to DKK 35 million over 7 years for a position at the full professor level.
- Annual programme budget: DKK 100 million
- Next application deadline September 2021



- **Candidates must be recruited from abroad and be endorsed by the universities according to a nomination quota**
- **The candidate's research must align with Nat-Tech key strategic themes** - with potential applications in biomedicine or biotechnology:
  - 1) Interdisciplinary research rooted in the natural and technical sciences
  - 2) Quantum based technologies to solve complex and important problems in biology, chemistry, or medicine
  - 3) Data science research with focus on fundamental algorithms and interdisciplinary applications
  - 4) Technology for tomorrow's medical science and applications

(Read more about eligibility and assessment criteria on the call page)

# Start Package grant – for faculty recruitment

## OBJECTIVE:

To increase researchers' mobility and make Danish universities or other research institutions more competitive when recruiting top researchers of any nationality to time-unlimited research positions.

- Grant budget:
  - up to DKK 6 million over 4 years for a position at the associate professor level
  - up to DKK 8 million over 4 years for a position at the full professor level
- Annual programme budget: DKK 70 million
- Open all year with four quarterly deadlines

**Only applications submitted by the person with appointment authority at the recruiting institution will be considered for funding**

- The candidate can be recruited from abroad, from a Danish institution (with mobility and career progression) or from industry
- The candidate must be offered a time-unlimited research position
- The candidate's research must align with the strategic key themes of the scientific grant-giving areas (see areas of support on call page).
- The candidate should contribute to scientific, educational and other activities at the recruiting institution.

(Read more about eligibility and assessment criteria on the call page)



# Visiting Postdoc fellowships at Stanford Bio-X

A photograph of the Stanford Bio-X building, a modern multi-story structure with a central courtyard. The building features large glass windows and a prominent copper-colored metal frame. The courtyard is landscaped with green grass and several young trees. The sky is a clear, deep blue, suggesting dusk or dawn.

- Support **young promising and ambitious researchers** in interdisciplinary research
- Facilitate return to, and continue career in, the Danish research environment after stay abroad
- 3 years at Stanford Bio-X with a Stanford Bio-X supervisor + 1 year in DK with a hosting supervisor

- Grant budget: DKK 4 million over 4 years
- Programme budget: DKK 8 million
- Call opens: **November 2020**
- Application deadline: **February 2021**
- Grant notification: May 2021



# Conferences, Symposia and Workshops

- Promote **knowledge sharing** and **networking** activities
- opportunities to present and discuss the **newest research and innovation activities** within their fields
- events can be located at hospitals or universities and are **organized by the researchers themselves**

- Grant budget: DKK 0.5 million
- Programme budget: DKK 8 million
- Calls open: **January/September 2021**
- Deadlines: **March/October 2021**

# Open competition calls

[novonordiskfonden.dk/en/grants/](https://novonordiskfonden.dk/en/grants/)

Challenge Programme 2021: Smart nanomaterials for applications in life-science

CALL OPENS 03 Aug 2020

DEADLINE 29 Oct 2020, 2pm (CET)

AMOUNT DKK 30-60 million per grant

ANNOUNCEMENT OF RESULTS: Stage 1: Early January 2021 Stage 2: June 2021

How to apply

Apply

Contact  
**Kasper Nørgaard**  
Senior Scientific Manager, PhD  
+45 3527 6538  
KNO@novo.dk  
**Anne-Sofie Tafdrup**  
Grant Specialist  
+45 3527 6553  
ASL@novo.dk

novonordiskfonden

## Grants in open competition

Open and upcoming calls for applications

Start Package Grants – For faculty recruitment 2020 Q2

Area: Biomedicine and health sciences, Biotechnology, Natural and Technical Science  
Place of research: Denmark  
Amount: Up to Up to DKK 8 million per grant  
Recurring Call: Primo May 2020  
Call opens: February 24 2020 | Deadline: May 18 2020, 2pm (CEST)

Societal Responses to and Preparedness for Emerging Viral Infections – 2020

Area: Biomedicine and health sciences, Coronavirus  
Place of research: Denmark (international collaboration allowed)  
Amount: Up to DKK 10 million per grant  
Call opens: March 11 2020 | Deadline: June 04 2020, 2pm CEST

PreSeed Program – Grants for Research Institutions

Area: Biomedicine and health sciences, Biotechnology, Innovation and early commercialization  
Place of research: The Nordics  
Amount: Up to DKK 3.5M  
Call opens: March 18 2020 | Deadline: June 04 2020, 2 pm (CET)

Funding finder  
Overall area: All  
 show only open calls  
What do we not support? ›  
Unsolicited inquiries ›

By continuing to use the site, you agree to the use of cookies. Accept Privacy policy

novonordiskfonden

CHALLENGE PROGRAMME 2021: Smart nanomaterials for applications in life-science

- You are **strongly** encouraged to:
- 1) Read the Guidelines for Applicants for detailed information!
  - 2) Give us a call if you have questions to our programmes

# Unsolicited applications

From <https://novonordiskfonden.dk/en/application-guidelines-unsolicited-applications/>

## BASIC INFORMATION (mandatory)

Type of inquiry (general funding question/expression of interest/application):

Category (research, education, outreach, innovation, social and humanitarian purposes, other)

Applicant name, position and institution

Expected grant holder (the grant holder needs to be a University, NGO, or Hospital)

Project title

## MOTIVATION FOR APPLICATION

Short description of the project, including aims, hypotheses, planned activities, methods and expected results.

Project originality, feasibility, and newsworthiness

Time frame

Estimated budget (including the amount applied for and overall budget)

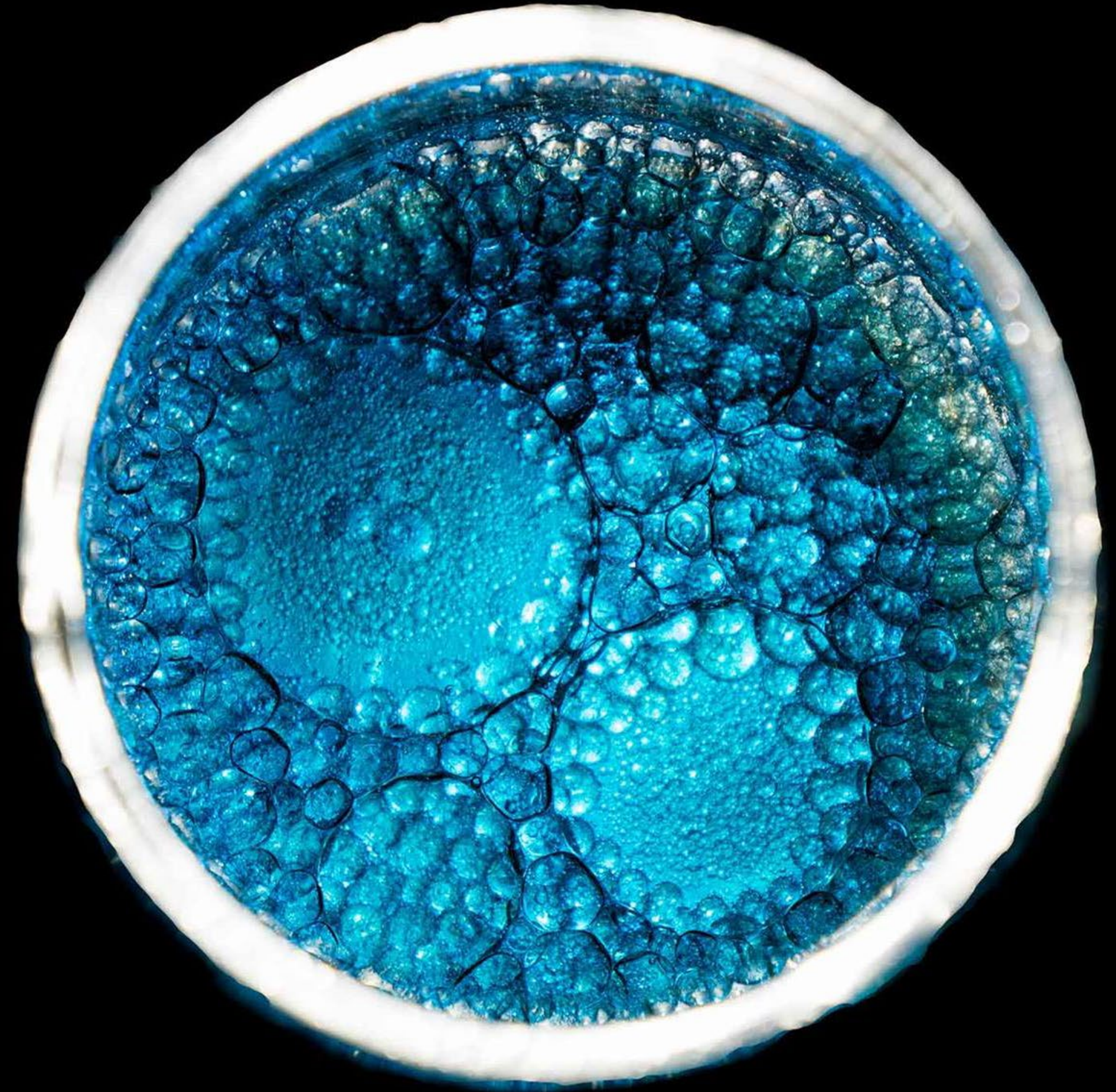
Any other funding received and/or applied for

## RELEVANCE TO THE NOVO NORDISK FOUNDATION STRATEGY (mandatory)

Describe how the expression of interest/application is aligned with the Novo Nordisk Foundation strategy

Motivate why your projects falls outside our calls within the subject field offered in open competition

# Thank you!



# Nat-Tech open competition activities in 2021

**DKK 779 million  
total funding**

<https://novonordiskfonden.dk/en/grants/>

Programme	Budget DKK million	Grant size DKK million	Committee	Deadline	Reply	Contact
NERD	98	10.5-14	Natural and Technical Sciences	28 January	June	Kasper, Signe
Projects	60	Up to 3	Natural and Technical Sciences	September	December	Kasper, Signe
Synergy*	75	Up to 15	Interdisciplinary Research	June	December	Kamilla, Anne-Sofie
Exploratory Synergy*	50	Up to 5	Interdisciplinary Research	August	December	Kamilla, Anne-Sofie
Postdocs @ Stanford Bio-X	8	Up to 4	Interdisciplinary Research	February	May	Kamilla, Anne-Sofie
Infrastructure	50	5-25	Internal / peer review	February	September	Kamilla, Anne-Sofie
Data Science Collaborative*	60	Up to 25	Data Science (ad-hoc)	16 March	December	Morten, Signe, Ulrik
Data Science Infrastructure*	40	5-15	Data Science (ad-hoc)	4 May	December	Morten, Signe, Ulrik
Data Science Investigators*	60	Up to 10	Data Science (ad-hoc)	9 March	September	Morten, Signe, Ulrik
Challenge 2022	120	30-60	Challenge (ad-hoc)	November	June 2022	TBD
Start Package*	70	Up to 8	University / internal	Quarterly	1 month	Kamilla, Signe
RECRUIT	80	Up to 35	Internal / peer review	September	April 2022	Kamilla, Signe
Conferences*	8	Up to 0.5	Internal	Mar/Sept	May/Nov	Christina, Morten

\*Cross-disciplinary initiatives, topics covering Nat-Tech, Biomed and Biotech grant giving areas