Annual Report 2020

454
research ideas funded by

1.5
DKK billions

DANMARKS FRIE FORSKNINGSFOND
INDEPENDENT RESEARCH FUND DENMARK

“Independent research creates the foundation for new ideas, and the best ones bear fruit“

Maja Horst, Chair, Independent Research Fund Denmark

Content

Front and back page

Sapere Aude: DFF-Starting Grant 2020

Photos by: Tariq Mikkel Khan

Sapere Aude: DFF-Starting Grant is aimed at providing excellent younger researchers with the opportunity to develop research ideas and carry out research at a high, international level as leaders of a research team.

PREFACE

In 2020, Independent Research Fund Denmark has funded 454 new, excellent research projects, established international collaborations and instruments, and has left a significant green impact. In 2020, researchers applied for a little over DKK 13 billion – the highest amount in over 10 years, which also has led to a debate about the success rates of independent research. Of course, it was also the year of corona, and the fund has urgently distributed corona funds and converted most of its advisory activities to digital platforms.

International collaboration

Interdisciplinarity has been central to the Nordic research collaboration, NordForsk, where Independent Research Fund Denmark has taken steps to set the framework for a common research programme. Funds for 12 excellent, interdisciplinary research projects across research environments in the Nordic countries were granted. The great interest in the programme, with 337 expressions of interest in the pre-qualification round and the high professional level among the researchers, indicate that there is a foundation for strong interdisciplinary projects in the Nordic research environments, and it emphasises the need for programmes aimed at interdisciplinary research. From a Danish perspective, Independent Research Fund Denmark is pleased with both the overwhelming interest in the programme and the fact that five of the projects are led by Danish researchers while another four projects have Danish participants.

Interdisciplinarity is also in focus within the new European collaboration, CHANSE (Collaboration of Humanities and Social Sciences in Europe), which has prepared its first proposal and

where applications will be processed and projects distributed in 2021 and 2022. The CHANSE consortium consists of 27 research funds from 24 countries, and the consortium grants EUR 36 million (approximately DKK 270 million) through the programme CHANSE Transformations: Social and Cultural Dynamics in the Digital Age.We know that a good framework for interdisciplinary research is part of what can create breakthroughs and open new horizons for cognition and knowledge, both across borders and across scientific areas and disciplines.

Third year with thematic research funds: A better balance

This year was the third in which the fund granted thematic research funds. Three years of experience with thematic grants in Independent Research Fund Denmark have demonstrated the importance of awarding thematic funds under an openly phrased call. A call for all sorts of ideas and not only the ideas we think we need. That is exactly what independent research can do, namely prepare us for the future – a future we obviously do not know. As the pages in this annual report will show, it is also obvious that independent, competitive research creates the foundation for new ideas to grow, the best ones of which are allowed to blossom and bear fruit. We saw it with the vaccine technologies in 2020, where decades of basic research in mRNA (messenger ribonucleic acid) and its possible applications became key to the success of the mRNA vaccines. And we will very likely see it again with the green transition where the curiosity-driven basic research will really create the breakthroughs that will prepare us for the future.

New chair

2020 was the last year with David Dreyer Lassen as chair of the board at Independent Research Fund Denmark. He has worked hard for the independent research, for instance by focusing on the necessity of independent, excellent, and competitive research, on the fund's success rates, and on the fact that a willingness to take risks must come from several actors, both researchers and funds, but also to a great extent, from politicians. You can read more about these topics in this annual report.

In April 2021, I sat down at the top of the digital table, and hopefully I will sit at the top of the actual table, when the pandemic allows it. As newly appointed chair, I look forward to working with all the new and existing council members who make up Independent Research Fund Denmark.

Breakthroughs in 2021

In 2021, Independent Research Fund Denmark will launch a new strategy with focus on excellence, research impact, and, not least, scientific breakthroughs, and in the fall, the fund will allocate almost DKK 313 million to the green transition. Furthermore, in 2021 we will focus on diversity when the fund presents an analysis of diversity in research funding in collaboration with the think tank DEA.

Top-quality applications

2020 has been the year of research and science. Prime Minister Mette Frederiksen's "long live science"-quote from her New Year Address has travelled through the world of science. Especially the importance of independent research has come into focus because of the pandemic. Independent Research Fund Denmark receives top-quality applications, and every year we have to reject far too many highly qualified applicants and applications that should have been granted funds. This is partly because of the enormously high level of quality within the Danish research environment, and partly because research funds have been reduced. If we do not continue to care for and prioritise independent research, we will, over time, undermine the very research foundation which is supposed to prepare us for the unknown challenges of the future. One can only hope that the newfound focus on the importance of science will influence the priority level of independent research on the political agenda.

Maja Horst, Chair,
Independent Research Fund Denmark

Highlights 2020

DKK 22 million

15 grants:

Corona-related research

As part of the efforts to alleviate the COVID-19 crisis, the Danish Minister for Higher Education and Science gave Independent Research Fund Denmark the task of urgently allocating DKK 22 million . The funds were distributed in record time. Only 16 days passed from the publication of the call for proposals until the projects were assessed and the decision to provide grants for 15 projects was made.

DKK 333 million

66 grants:

Green transition

The 66 green research projects were funded with thematic research funds, that is, funds that are allocated within a politically determined theme. The projects encompass a broad spectrum of research on the green transition, e.g. research on new crops, on the effects of Greenland's melting ice on the weather in Denmark, and on laundry detergents that work at low temperatures.

Awarded grants in 2020

January

- **DKK 26 million**
  DFF-International Postdoctoral Grant
- **DKK 9.3 million**
  Clinician Scientist Positions | Medical Sciences

April

- **DKK 22.1 million**
  DFF | Thematic research: Corona-related research
- **DKK 425.9 million**
  DFF-Research Project1
- **DKK 326.6 million**
  DFF-Research Project2

May

- **DKK 2.2 million**
  Pre-graduate Scholarships | Medical Sciences
- **DKK 1.2 million**
  International Research Stays | Social Sciences

June

- **DKK 0.6 million**
  Journals | Humanities
- **DKK 26 million**
  DFF-International Postdoctoral Grant
- **DKK 5.8 million**
  Research networks | Humanities
- **DKK 21.9 million**
  Non-university Research Education (PhD)

DKK **214** million

35 grants:

Sapere Aude: DFF-Starting Grant

In order to be able to stand with a Sapere Aude: DFF-Starting Grant in hand, the candidates have been through two rounds of assessment in the fund's research councils, an individual peer review by international experts, and finally, a cross-council interview, based on which the 35 research leaders were chosen.

DKK **124** million

12 grants:

Nordic Programme for Interdisciplinary Research*

The programme is a collaborative effort between Independent Research Fund Denmark, the Research Council of Norway, the Academy of Finland, the Swedish Research Council, Formas and Forte in Sweden, and Rannis in Iceland and is distributed by NordForsk. Out of 12 new international research projects, five are led by Danish researchers and another four projects include Danish participants.

*As this instrument is distributed by NordForsk, it is not included in the numbers and statistics of Independent Research Fund Denmark.

September

- **DKK 20 million**
  DFF | Thematic research: Work on Development of the Economic Modelling Principles

October

- **DKK 20 million**
  DFF | Thematic research: Effects of early intervention
- **DKK 333 million**
  DFF | Thematic research: Green transition

November

- **DKK 0.8 million**
  International Research Stays | Social Sciences
- **DKK 213.6 million**
  Sapere Aude: DFF-Starting Grant
- **DKK 19.3 million**
  The Inge Lehmann programme

December

- **DKK 9.8 million**
  DFF–Danish ERC programme

THEMATIC ARTICLES

Research is an ecosystem

Research roams across borders

Green research is diverse research

Research is an ecosystem where all links in the food chain are vital

THEMATIC ARTICLE

In 2020, when the European Research Council (ERC) awarded its prestigious Consolidator Grants to 327 talented European researchers, there were nine researchers from Danish universities among the recipients. Six out of the nine researchers had received funding from Independent Research Fund Denmark previously.

This points to the role played by Independent Research Fund Denmark with regard to cultivating the growth layer of research talent that will ensure a high international and competitive quality level within Danish research in the future.

Research is an ecosystem where all links in the food chain play a vital role. Every strategic and goal-oriented research effort requires a foundation of research capacity to take on the task; that means both basic knowledge and the techniques and methods needed. This has become evident during the last year's corona crisis.

Acute research efforts require long-term investments

When a crisis hits society, we need to be able to draw on and produce knowledge about what threatens us, and about what we can do to fend off the threat. During the pandemic, researchers all over the world have worked hard to deliver the necessary answers in the battle against Covid-19. All over the research landscape, researchers have mobilised with lightning speed to get to know the disease and understand the consequences for the individual patient and society as a whole. This research infrastructure and preparedness is exactly what has made rapid vaccine development possible.

To a great extent, this ability to act quickly is the result of many years' work to build up research capacity by cultivating the best and most talented researchers and establishing excellent research environments. New scientific knowledge does not present itself on command but requires that researchers be given the opportunity and the time to immerse themselves – often over decades.

A great example is professor Ali Salanti from the University of Copenhagen who has, for many years, been researching advanced methods to fight a range of diseases, including malaria, cancer, and influenza, with funding from Independent Research Fund Denmark. Thus, he and his team of researchers could quickly begin developing a new vaccine when Covid-19 hit in the spring of 2020.

Research infrastructure and preparedness: a critical piece of infrastructure

The Covid-19 crisis has sharpened society's focus on research and made it clear that effective research environments of high quality make up critical infrastructure in a modern society – a strong and foundational research infrastructure. Research is both a product and a process. The product is new knowledge while the process teaches the researchers new approaches and methods for solving hitherto unknown problems. The challenges of tomorrow are always different from those of yesterday.

The product is new knowledge while the process teaches the researchers new approaches and methods for solving hitherto unknown problems.

If we focus too much on short-term strategic priorities, we risk moving the focus in the direction of the challenges already visible to us while hiding the ones that we know are coming but do not yet know the nature of.

That is why we need foundational research infrastructure and preparedness and not only knowledge infrastructure. Before anyone else, researchers know where we lack knowledge and what methods can provide new insights. It is not possible to just turn on the research machinery on short notice, feed it a certain input, and expect a given output. You can only plan for what you know, and, to some degree, for what you know that you do not know. We cannot plan our way out of all the things that we are not yet aware that we do not know. But we can prepare for it by making sure that independent, curiosity-driven research has the best possible conditions.

Ali Salantis research journey: From malaria to corona vaccine

2001	**Malaria protein VAR2**	3 m	INDEPENDENT RESEARCH FUND DENMARK	Ali Salanti writes Ph.D. on malaria in pregnant women. The grant goes to research the protein VAR2, which the malaria parasite uses to attach itself to the placenta.
2003	**Patent**			Ali Salanti and the University of Copenhagen take out a patent on using VAR2 as a target for a malaria vaccine.
2004	**Malaria vaccine**	2.5 m	INDEPENDENT RESEARCH FUND DENMARK	Postdoc grant to develop a vaccine that targets the specific protein of the malaria parasite.
2007		2.5 m	INDEPENDENT RESEARCH FUND DENMARK	Postdoc grant for Ali Salanti's closest staff member
2011	**Malaria vaccine tests on humans**	37 m 37 m 7 m	Innovation Fund Denmark EUROPEAN VACCINE INITIATIVE	Ali Salanti and his research team are starting to test the malaria vaccine on humans.
2012		6.5 m	BILL & MELINDA GATES foundation	Ali Salanti and his research team are starting to test the malaria vaccine on humans.
2013	**Cancer research**	2.5 m	INDEPENDENT RESEARCH FUND DENMARK	Ali Salanti discovers link between cancer sugar molecule and malaria parasite protein VAR2.
2014				The researchers create the spin-off company VAR2 pharmaceuticals and take patent on using VAR2 to both attack and detect cancer.
2015		2.6 m 15 m	INDEPENDENT RESEARCH FUND DENMARK erc European Research Council	The team is researching in the use of malaria protein VAR2 to attack cancer.
2017		2.5 m	INDEPENDENT RESEARCH FUND DENMARK	Research on the detection of cancer using the VAR2 protein
	Spin-off company and patent		INDEPENDENT RESEARCH FUND DENMARK	The researchers create the spin-off company VARCT Diagnostics, which works with the method of detecting bowel cancer, pancreatic cancer and prostate cancer via blood tests. They patent their special way of developing vaccines – where artificial viruses similar to HPV virus carry antigen for the disease you want to vaccinate against. They create the spin-off company AdaptVac, which is a joint venture with the Danish biotech company ExpreS2ion Biotechnologies.
2020	**Corona research**	25 m	CARLSBERG FOUNDATION	Research into inhibiting the spike protein that triggers the penetration of human cells by binding to a receptor called ACE2. It is this bond that Ali Salanti and his team are trying to prevent with a vaccine.
		1.6 m	INDEPENDENT RESEARCH FUND DENMARK	Research to stay ahead of developments in the the coronavirus and produce prototype vaccines that can quickly and agilely replace the most current mutations and variants of Covid-19.

THEMATIC ARTICLE

Research roams freely across borders – physically as well as professionally

RESEARCH CASE STUDY

Researchers seek to prevent stomach ache in infants

With funds from Independent Research Fund Denmark, researchers will take a close look at the intestinal development of the infant's first year of life. The goal is to prevent stomach ache in infants.

In the first years of their lives, small children undergo dramatic dietary changes. From eating only breast milk or formula, they are introduced to solid foods and end up eating the same complex diet as adults. And many infants struggle with diarrhoea, constipation, and colic, which are also often caused by intestinal problems.

The major changes can obstruct the intestinal system or make it accelerate very quickly, which leads to the infant having a stomach ache. Therefore, the research project *Diet-derived microbial metabolites to modulate gut motility in infants* will take a close look at the interplay between diet, intestinal bacteria, and intestinal peristalsis, which is the movement of the intestines. The goal is to be able to treat constipation, diarrhoea, and colic in infants.

"If we can understand how intestinal bacteria in infants affect intestinal peristalsis, we will be able to develop new foods, probiotics, or medicines to treat stomach ache in infants."

Henrik Roager, assistant professor in the Department of Nutrition, Exercise and Sports at University of Copenhagen.

Henrik Roager leads the Sapere Aude research project with funds from Independent Research Fund Denmark. The project will follow 125 Danish children from birth to about one year of age. The researchers will collect stool samples and information about dietary and bowel movement patterns. They will then map the intestinal bacteria and molecules in the gut to identify some of the basic ways in which intestinal bacteria can affect the intestinal peristalsis, meaning the muscle contractions moving the stool through the intestine.

"Digestion is incredibly important for our well-being. If you have a stomach ache, it affects you, no matter if you're a child or an adult. If we can remedy the problem of constipation and diarrhoea and thereby achieve a better understanding of the intestinal mechanism, it would be worth a lot."

Henrik Roager, assistant professor in the Department of Nutrition, Exercise and Sports at University of Copenhagen.

The project, which will span the course of four years, will take place in close collaboration with researchers from APC Microbiome Ireland and Quadram Institute in England. They are both leading researchers in the field of infant gut bacteria.

We hope that the project's results will benefit all infants and their parents in the long run. In addition, the basic knowledge of what affects intestinal peristalsis can potentially help adults who suffer from constipation. ■

Breakthroughs in research come from innovative researchers whose original ideas challenge established ways of thinking. High-quality research requires good conditions for independent, curiosity-driven research lending the most talented researchers the opportunity to pursue their ideas in every direction

It is the curiosity and drive towards new knowledge that will attract and hold on to the most brilliant heads. The opportunity to conduct independent research is necessary to ensure the growth of research talents, which will raise the research quality in the long run.

Therefore, it is important to protect researchers' independence across borders – both physically and professionally. It is all about ensuring a free choice of subject, method, and approach along with the opportunity to break traditional limits between research areas and create the breakthroughs that will open new horizons to science and society. It is also about making connections between excellent research environments, both within the country and across borders.

Independent Research Fund Denmark (DFF) works in several strategic ways to ensure the best conditions for researchers and the free development of research. The fund's portfolio of grants is arranged to ensure the growth of strong research talents, but it is also meant to support professional breadth and as much internationalisation as possible. The fund continually develops its processes and concrete initiatives to ensure that the research funding system can accommodate interdisciplinary research.

Cultivating growth layers ensures excellence in future research

A central tool in the fund's strategic toolbox is the Sapere Aude programme, which is meant to give excellent young researchers from across the professional spectrum the opportunity to develop and strengthen their research activities. In 2020, Independent Research Fund Denmark awarded 36 Sapere Aude grants to new research leaders who will look at everything from the impact of diet on infant digestion to the advent of neo-nationalism in European university politics.

The Sapere Aude programme aims at young research talents who will be given the opportunity to lead their own research group and implement research projects at a high international level. In the evaluation of Sapere Aude applications, planned international activities are weighted highly, and in the process, the candidates must present their projects to an interdisciplinary evaluation committee consisting of the chairs of the five research councils of Independent Research Fund Denmark.

Hence, the Sapere Aude programme contributes to the development of research talents across the collective professional spectrum meant to ensure high quality and an international perspective within Danish research in the future.

Concurrently with the fund's development of its own processes and means, the fund is also part of external alliances and collaborations in the endeavour to ensure independent and curiosity-driven research. Thus, it was Independent Research Fund Denmark's initiative in 2019 to establish a collaboration programme for researcher-initiated, interdisciplinary research under the Nordic organisation NordForsk with the participation of the Danish, Norwegian, Swedish, Finnish, and Icelandic research funds.

In 2020, the programme allocated DKK 124 million distributed across 12 grants for interdisciplinary Nordic research projects.

The projects unite and synthesise subject knowledge from different research disciplines across Scandinavia with the purpose of adding knowledge to the world in a range of complex subjects.

For instance, one of the projects, led by chemistry professor Henrik Birkedal from Aarhus University, will look at the properties of the narwhal tusk to see what it might tell us about the history of environmental changes in the arctic. Another project, led by assistant professor Lone Simonsen from RUC, will look at 300 years of historic health data from the North to learn how factors such as urbanisation, migration, and climate changes affect epidemic and pandemic diseases.

These are just a few examples of the diversity and richness of ideas in research that are necessary for future breakthroughs. And this diversity and inventiveness require the researchers to be set free to pursue the questions that arouse their curiosity. ■

THEMATIC ARTICLE

Green research is diverse research

Batteries, charging stations, and development of new solar cell elements. Many people probably imagine a technically oriented type of research when they think of research meant to contribute to the green transition. But in reality, research contributes to the green transition in many and very diverse ways.

In 2020, Independent Research Fund Denmark awarded DKK 333 million to 65 research projects on green transition, and the projects range from cultivating sustainable crops and converting salt water into drinking water to green education in primary school.

"We see a lot of projects revolving around how human behaviour might facilitate the green transition. That is what you call research close to home"

Søren Rud Keiding, professor and chair of the thematic council for green transition in 2020.

Barriers to sustainable choices

To a great extent, our everyday choices are controlled by society's infrastructures, particularly with regard to our choice of houses, transportation, and groceries. One of the research projects funded by Independent Research Fund Denmark in 2020 will detect the connection between the behaviour of the individual and the structures of society when it comes to making green and sustainable choices. By looking at the ordinary everyday lives of young adults who are about to make their first big choices of car, house, bank, and groceries, the project will provide knowledge that we can convert into concrete sociopolitical recommendations.

Another central area of the green transition is the way we transport ourselves by car, bus, and truck. This area is responsible for a fourth of Denmark's total CO_2 emission. To reach the climate law's 2030 goal of a 70% reduction in greenhouse gas emission, the transport sector's CO_2 emission must be brought down. Another research project funded by Independent Research Fund Denmark in 2020 will develop a new model for determining an optimal toll level by predicting travel patterns and driving behaviour on the roads. The goal is to find out how different types of toll levels will affect both the CO_2 emission and factors such as mobility, traffic safety, and economy in order to organise an optimal toll system.

Three years of experience with thematic researc

In 2018, Independent Research Fund Denmark awarded funds for politically specified thematic areas for the first time. The DKK 333 million grant for the green transition call in 2020 is the largest thematic pool so far. The applications were processed by a thematic committee consisting of 19 leading Danish and international researchers in the green area, and in 2021, a new thematic committee for green transition will award almost DKK 313 million.

The large field of applicants and the diversity of the 2020 projects point to the fact that broadly formulated thematic research can supplement independent research. It also points to the importance of thematic calls being scientifically inclusive, so that we bring forward the best ideas from the largest group of talented researchers to solve the green challenges of the future. ■

INDEPENDENT RESEARCH IS

- based on the researchers' own initiatives.
- the first link in the food chain of research, and is vital for a healthy research ecology.
- both basic research and applied research.
- the foundation for future strategic investments.

Foundational, risk-willing research: is the building blocks of science in its endeavour to reach new knowledge backed by public funding, and provides important breakthroughs, patents, technology and companies.

THEMATIC RESEARCH IS

- politically specified themes for research activities.
- strategic initiatives for research and society.
- open to contributions from all scientific main areas.
- a supplement to independent research.

Political thematic research: is building a broad foundation of knowledge that strengthens the growth layer of researchers and builds up capacity within the research environments pertaining to each theme.

RESEARCH CASE

The car, the steak, and the house: What controls your 'green' everyday choices?

Researchers from Aalborg University and the University of Copenhagen will look at everyday barriers halting the green transition of transportation, foodstuffs, and housing. The goal is to create political recommendations for a sustainable transition of everyday consumption patterns.

The car, the steak, and the house are the largest sinners of everyday life when it comes to environmental and climate impact. At the same time, they are some of the most significant elements of our lives. Therefore, it is necessary to change our consumption patterns and everyday lives, if we want a more sustainable society. But we must not leave the individual consumer alone with the responsibility of appropriately considering the climate.

"Our everyday lives are very much controlled by the infrastructures of our societies such as houses, transport patterns, and foodstuffs. These structures need to be changed concurrently with us changing our ordinary everyday lives."

Kirsten Gram-Hanssen,
professor at the Department of the Built Environment
at Aalborg University

She will lead the research project Food, Mobility and Housing in the Sustainable Transition of Everyday Life (FOMOHO), which has been granted funds from Independent Research Fund Denmark in 2020.

Kirsten Gram-Hanssen will look at how everyday practice with regard to transportation, foodstuffs, and housing relates to and is shaped by material, cultural, and organisational structures of society. This takes place in collaboration with another two professors: Bente Halkier from the Department of Sociology at the University of Copenhagen, and Malene Freudendal-Pedersen from the Department of Planning at Aalborg University.

"We want to identify which societal structures are responsible for people ending up in situations that are less sustainable than they wanted in the first place," says Kirsten Gram-Hanssen.

Through two types of interviews, individual and focus group interviews, the researchers will look at what works as driving forces towards more sustainable consumption patterns. The researchers will interview young adults who are settling in new houses and thus face new transportation and shopping patterns.

"We know that climate matters to the younger generation. So how do climate considerations affect their housing choices and shopping? Do they think about it? Not everybody can afford to choose freely among, for instance, all the houses available. So, what stops them from making the sustainable choices?" asks Kirsten Gram-Hanssen.

Develops new form of interview

Based on the results from the individual interviews, the researchers want to develop a new form of focus group interview. The young adults will meet relevant professional representatives from the sectors that might halt the green transition according to the individual interviews.

"Maybe the individual interviews show that the supermarkets are not selling the products that the consumer actually needs to change his or her behaviour. Or maybe the bank will not provide a loan to buy the most sustainable house. We will then bring together representatives from the bank and the supermarket and have them meet the young adults in a focus group interview."

Kirsten Gram-Hanssen,
professor at the Department of the Built Environment
at Aalborg University

The goal of the project, which will span the course of five years, is to create political recommendations for how different societal sectors might work together to support a sustainable transition of everyday consumption patterns.

"The goal is to make it easy and attractive for the consumer to choose sustainable alternatives based on politics and development of infrastructure," says Kirsten Gram-Hanssen.

2020 IN FIGURES

APPLICATIONS AND GRANTS 2020

Independent Research Fund Denmark in figures 2020

Funds applied for, DKK m.	Funds granted, DKK m.*	Success rate	Applications	Grants	Success rate
13.009	1.488	11%	3.579	454	13%

*Funds granted exceeds the annual national budget financing as the amount granted includes the distribution of return flow from previous grants.

DFF | Humanities	Total	M	F
Funds applied for, DKK m.	1,847	961	887
Funds granted, DKK m.	178	92	85
Success rate	10%	10%	10%
Applications	508	258	250
Grants	58	25	33
Success rate	11%	10%	13%

DFF | Natural Sciences	Total	M	F
Funds applied for, DKK m.	2,371	1.883	488
Funds granted, DKK m.	271	215	55
Success rate	11%	11%	11%
Applications	636	507	129
Grants	82	67	15
Success rate	13%	13%	12%

DFF | Social Sciences	Total	M	F
Funds applied for, DKK m.	1,348	821	528
Funds granted, DKK m.	122	64	58
Success rate	9%	8%	11%
Applications	430	262	168
Grants	46	27	19
Success rate	11%	10%	11%

DFF | Medical Sciences	Total	M	F
Funds applied for, DKK m.	2,103	1.292	810
Funds granted, DKK m.	248	154	95
Success rate	12%	12%	12%
Applications	818	497	321
Grants	111	67	44
Success rate	14%	13%	14%

DFF | Technology and Production Sciences	Total	M	F
Funds applied for, DKK m.	2,524	1.940	584
Funds granted, DKK m.	270	217	53
Success rate	11%	11%	9%
Applications	644	489	155
Grants	76	60	16
Success rate	12%	12%	10%

DFF | Cross-council committee*	Total	M	F
Funds applied for, DKK m.	245	137	108
Funds granted, DKK m.	26	5	21
Success rate	11%	4%	20%
Applications	57	33	24
Grants	6	2	4
Success rate	11%	6%	17%

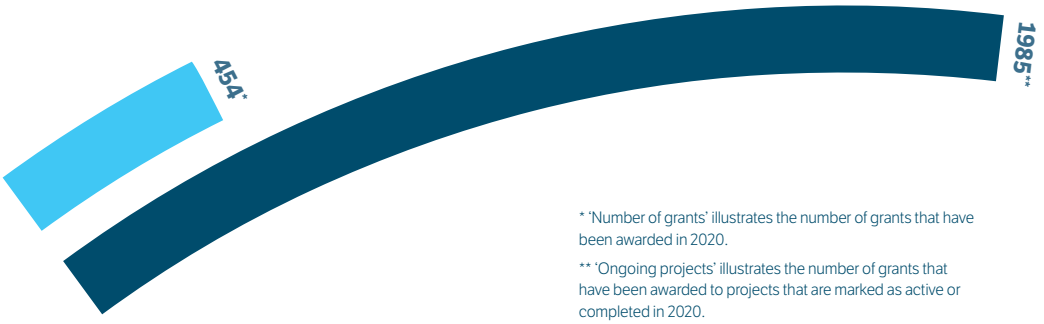
DFF | All councils excluding thematic research funds	Total	M	F
Funds applied for, DKK m.	9,773	6,633	3,140
Funds granted, DKK m.	1,093	734	359
Success rate	11%	11%	11%
Applications	2,729	1.832	897
Grants	364	239	125
Success rate	13%	13%	14%

Overview of instruments in 2020

	Applications	Grants	Success rate, numbers	Success rate M / F %	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Success rate M / F %	Avg. grant, DKK m.
DFF-Research Project1	1,236	163	13.2%	13.9/ 11.5	3,307.6	425.9	12.9%	13.5/ 11.3	2.6
DFF-Research Project2	560	57	10.2%	10.1 / 10.4	3,234.5	326.6	10.1%	10.2 / 9.7	5.7
Sapere Aude: DFF-Starting Grant	391	35	9.0%	7.6 / 11.6	2,355.3	213.6	9.1%	7.7 / 11.9	6.1
DFF-International Postdoctoral Grant	240	40	16.7%	16.9 / 16.3	334.4	56.0	16.8%	17.0 / 16.2	1.4
Research networks | Humanities	41	5	12.2%	4.8 / 20.0	45.7	5.8	12.6%	5.3 / 20.1	1.2
Journals | Humanities	12	4	33.3%	28.6 / 40.0	1.7	0.6	35.6%	30.1 / 43.5	0.2
International Research Stays | Social Sciences	27	7	25.9%	22.2 / 33.3	6.9	2.0	28.9%	22.3 / 43.9	0.3
Clinician Scientist Positions | Medical Sciences	28	8	28.6%	23.1 / 33.3	32.6	9.3	28.6%	21.0 / 35.3	1.2
Pre-graduate scholarships | Medical Sciences	59	16	27.1%	25.0 / 31.6	7.6	2.2	28.8%	27.7/ 30.9	0.1
Subtotal	**2,594**	**335**	**1.9%**	**12.8/ 13.3**	**9,326**	**1,042**	**11.2%**	**11.1 / 11.4**	**3.1**
The Inge Lehmann programme	76	5	6.6%	0.0 / 7.9	324.3	19.3	6.0%	0.0/ 7.2	3.9
Non-university Research Education (PhD)	44	9	20.5%	18.8 / 21.4	112.4	21.9	19.5%	16,1/ 21,5	2.4
DFF-Danish ERC Programme	15	15	100.0%	100.0 / 100.0	9.8	9.8	100.0%	100,0 / 100,0	0.7
Subtotal	**135**	**29**	**21.5%**	**27.8 / 19.2**	**446**	**51**	**11.4%**	**11,5/ 11,4**	**1.8**
DFF | Thematic research: Green transition	454	66	14.5%	14.4 / 14.9	2,430.6	333.4	13.7%	13,7/ 13,9	5.1
DFF | Thematic research: Effects of early intervention	23	4	17.4%	10.0 / 23.1	92.8	20.2	21.7%	12,4/ 29,3	5.0
DFF | Thematic research: Work on Development of the Economic Modelling Principles	9	5	55.6%	50.0/ 100.0	47.5	19.6	41.2%	37,4/ 100,0	3.9
DFF-Research Project1 (Corona)	364	15	4.1%	4.2/4.0	665.7	22.1	3.3%	3,2/ 3,5	1.5
Subtotal	**850**	**90**	**10.6%**	**11.0 / 9.7**	**3,237**	**395**	**12.2%**	**12,3/ 12,1**	**4.4**
Total	**3,579**	**454**	**12.7%**	**12.6/ 12.9**	**13,009**	**1,488**	**11.4%**	**11,4 / 11,6**	**3.3**

ONGOING RESEARCH PROJECTS

Ongoing projects and grants (number)



* 'Number of grants' illustrates the number of grants that have been awarded in 2020.

** 'Ongoing projects' illustrates the number of grants that have been awarded to projects that are marked as active or completed in 2020.

Overview of instruments in 2020 divided by council

DFF | Humanities

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	93	10	10,8%	256,8	27,9	10,9%	2,8
DFF-Research Project2	130	14	10,8%	770,9	74,8	9,7%	5,3
DFF-Research Project1 (Corona)	51	3	5,9%	97,7	3,5	3,6%	1,2
Sapere Aude: DFF-Starting Grant	74	6	8,1%	449,3	37,1	8,3%	6,2
The Inge Lehmann programme	19	1	5,3%	77,4	4,3	5,6%	4,3
DFF-International Postdoc	60	7	11,7%	83,0	9,6	11,5%	1,4
Non-university Research Education (PhD)	25	5	20,0%	63,4	12,8	20,2%	2,6
Research networks | Humanities	41	5	12,2%	45,7	5,8	12,6%	1,2
Journals | Humanities	12	4	33,3%	1,7	0,6	35,6%	0,2
DFF-Danish ERC Programme	3	3	100,0%	1,4	1,4	100,0%	0,5
Total	**508**	**58**	**11,4%**	**1.847**	**178**	**9,6%**	**3,1**

DFF | Natural Sciences

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	324	44	13,6%	890,6	116,7	13,1%	2,7
DFF-Research Project2	110	11	10,0%	666,1	67,4	10,1%	6,1
DFF-Research Project1 (Corona)	19	0	0,0%	39,3	-	0,0%	-
Sapere Aude: DFF-Starting Grant	103	10	9,7%	625,4	61,2	9,8%	6,1
The Inge Lehmann programme	10	1	10,0%	46,3	3,5	7,5%	3,5
DFF-International Postdoc	61	11	18,0%	86,3	15,4	17,8%	1,4
Non-university Research Education (PhD)	5	1	20,0%	12,9	2,6	20,0%	2,6
DFF-Danish ERC Programme	4	4	100,0%	4,0	4,0	100,0%	1,0
Total	**636**	**82**	**12,9%**	**2.371**	**271**	**11,4%**	**3,3**

DFF | Social Sciences

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	125	13	10,4%	313,5	32,0	10,2%	2,5
DFF-Research Project2	93	9	9,7%	523,3	44,1	8,4%	4,9
DFF-Research Project1 (Corona)	99	6	6,1%	189,3	6,3	3,3%	1,1
Sapere Aude: DFF-Starting Grant	38	4	10,5%	231,1	24,6	10,6%	6,1
The Inge Lehmann programme	6	1	16,7%	22,6	3,4	15,2%	3,4
DFF-International Postdoc	39	5	12,8%	54,1	6,9	12,8%	1,4
Non-university Research Education (PhD)	3	1	33,3%	7,6	2,5	33,0%	2,5
Forskningsophold i udlandet | Samfund og Erhverv	27	7	25,9%	6,9	2,0	28,9%	0,3
DFF-Danish ERC Programme	0	0	-	-	-	-	-
Total	**430**	**46**	**10,7%**	**1.348**	**122**	**9,0%**	**2,6**

DFF | Medical Sciences

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	366	57	15,6%	924,2	138,6	15,0%	2,4
DFF-Research Project2	69	5	7,2%	340,5	30,6	9,0%	6,1
DFF-Research Project1 (Corona)	163	5	3,1%	268,4	9,5	3,5%	1,9
Sapere Aude: DFF-Starting Grant	65	6	9,2%	371,3	35,2	9,5%	5,9
The Inge Lehmann programme	20	1	5,0%	84,0	4,9	5,8%	4,9
DFF-International Postdoc	37	8	21,6%	50,8	11,6	22,9%	1,5
Non-university Research Education (PhD)	8	2	25,0%	20,7	4,0	19,4%	2,0
Clinician Scientist Positions | Medical Sciences	28	8	28,6%	32,6	9,3	28,6%	1,2
Pre-graduate scholarships | Medical Sciences	59	16	27,1%	7,6	2,2	28,8%	0,1
DFF-Danish ERC Programme	3	3	100,0%	2,5	2,5	100,0%	0,8
Total	**818**	**111**	**13,6%**	**2.103**	**248**	**11,8%**	**2,2**

DFF | Technology and Production Sciences

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	306	36	11,8%	863,1	102,8	11,9%	2,9
DFF-Research Project2	145	17	11,7%	859,3	103,5	12,0%	6,1
DFF-Research Project1 (Corona)	32	1	3,1%	70,9	2,8	3,9%	2,8
Sapere Aude: DFF-Starting Grant	94	7	7,4%	577,0	43,3	7,5%	6,2
The Inge Lehmann programme	21	1	4,8%	94,0	3,3	3,5%	3,3
DFF-International Postdoctoral Grant	40	9	22,5%	55,3	12,6	22,7%	1,4
Non-university Research Education (PhD)	1	0	0,0%	2,6	-	0,0%	-
DFF-Danish ERC Programme	5	5	100,0%	1,9	1,9	100,0%	0,4
Total	**644**	**76**	**11,8%**	**2.524**	**270**	**10,7%**	**3,6**

DFF | Cross-council committee

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1	22	3	13,6%	59,4	7,8	13,2%	2,6
DFF-Research Project2	13	1	7,7%	74,4	6,2	8,3%	6,2
Sapere Aude: DFF-Starting Grant	17	2	11,8%	101,2	12,3	12,2%	6,2
DFF-International Postdoctoral Grant	3	0	0,0%	4,9	-	0,0%	-
Non-university Research Education (PhD)	2	0	0,0%	5,2	-	0,0%	-
Total	**57**	**6**	**10,5%**	**245**	**26**	**10,8%**	**4,4**

DFF | Thematic research – all thematic instruments

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF | Thematic research – Green transition	454	66	14,5%	2.430,6	333,4	13,7%	5,1
DFF | Thematic research – Effects of early intervention	23	4	17,4%	92,8	20,2	21,7%	5,0
DFF | Thematic research – Social Sciences – Work on Development of the Economic Modelling Principles	9	5	55,6%	47,5	19,6	41,2%	3,9
Total	**486**	**75**	**15,4%**	**2.571**	**373**	**14,5%**	**5,0**

DFF | Thematic research – Green transition

	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Succesrate beløb	Avg. grant, DKK m.
DFF-Research Project1 (thematic)	207	37	17,9%	578,3	102,4	17,7%	2,8
DFF-Research Project2 (thematic)	175	19	10,9%	1.033,1	114,2	11,1%	6,0
DFF-Research Project3 (thematic)	72	10	13,9%	819,2	116,9	14,3%	11,7
Total	**454**	**66**	**14,5%**	**2.431**	**333**	**13,7%**	**5,1**

DFF | Thematic research – Effects of early intervention

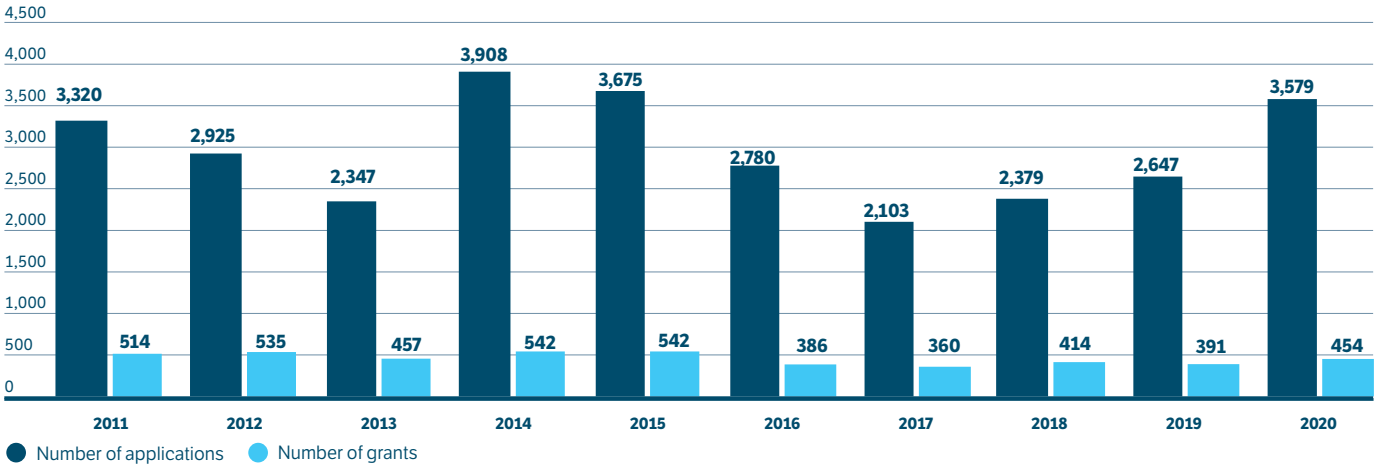
	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1 (thematic)	12	1	8,3%	29,0	2,7	9,4%	2,7
DFF-Research Project2 (thematic)	11	3	27,3%	63,8	17,4	27,3%	5,8
Total	**23**	**4**	**17,4%**	**93**	**20**	**21,7%**	**5,0**

DFF | Thematic research – Social Sciences – Work on Development of the Economic Modelling Principles

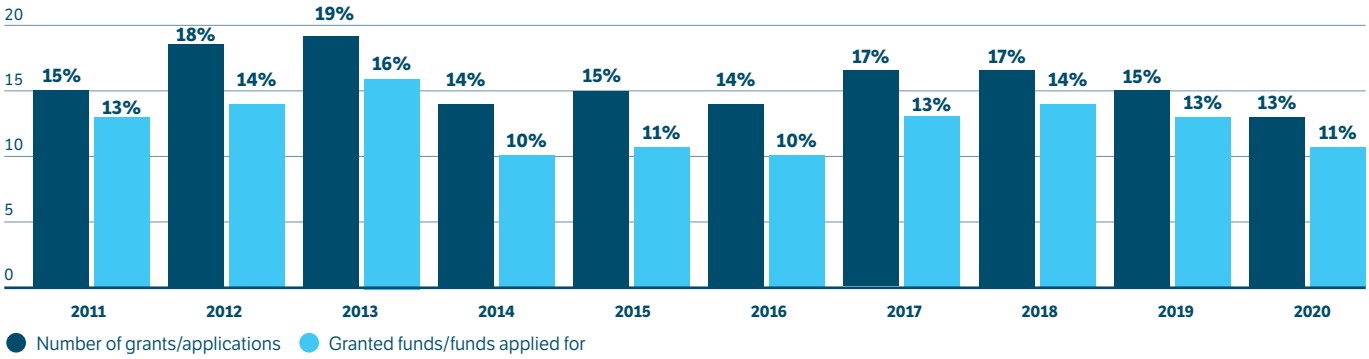
	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Granted funds, DKK m.	Success rate, sum	Avg. grant, DKK m.
DFF-Research Project1 (thematic)	5	4	80,0%	14,3	11,5	80,4%	2,9
DFF-Research Project2 (thematic)	4	1	25,0%	33,2	8,1	24,3%	8,1
Total	**9**	**5**	**55,6%**	**48**	**20**	**41,2%**	**3,9**

APPLICATIONS AND GRANTS 2020

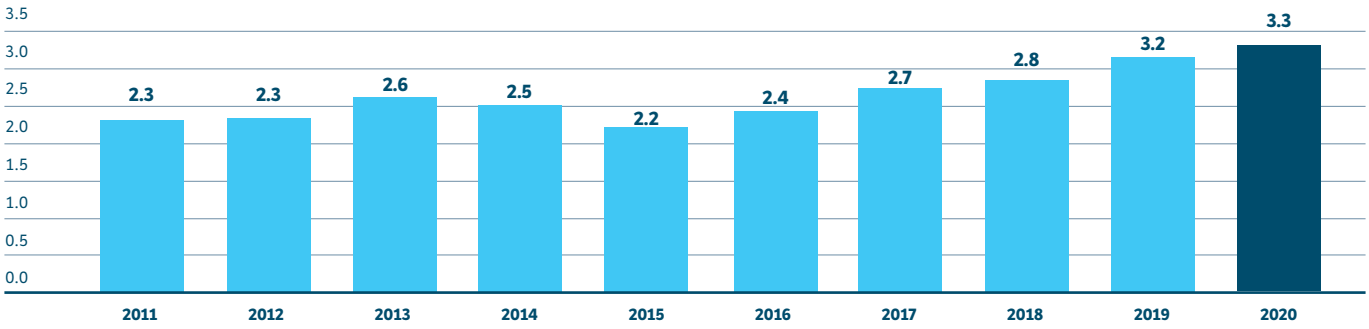
Number of applications and grants in Independent Research Fund Denmark 2011-2020



Development of average success rates in Independent Research Fund Denmark 2011-2020 (percentage)

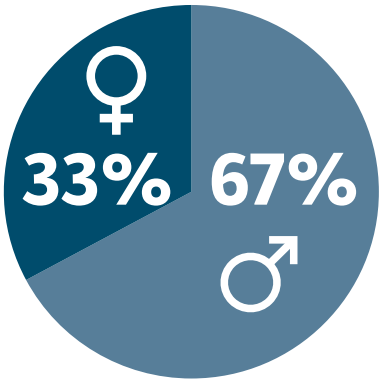


Development of average grant size in Independent Research Fund Denmark 2011-2020 (current prices, DKK m.)

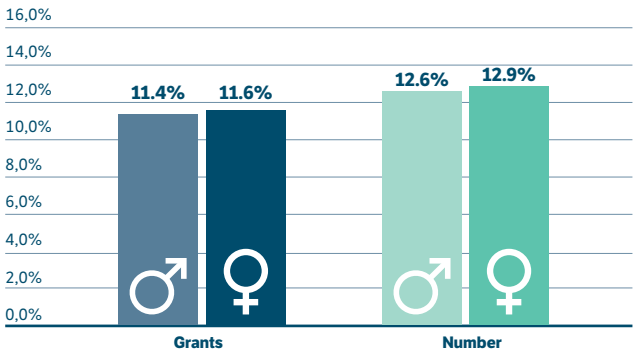


3.3 average grant size, DKK million

454 applications in 2020 divided by gender

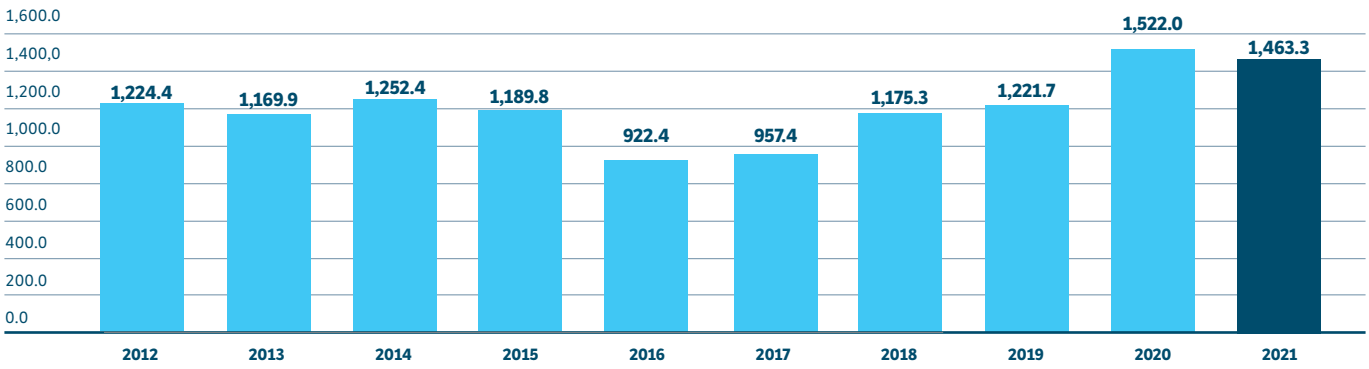


Success rates in Independent Research Fund Denmark divided by gender, 2020 (percentage)



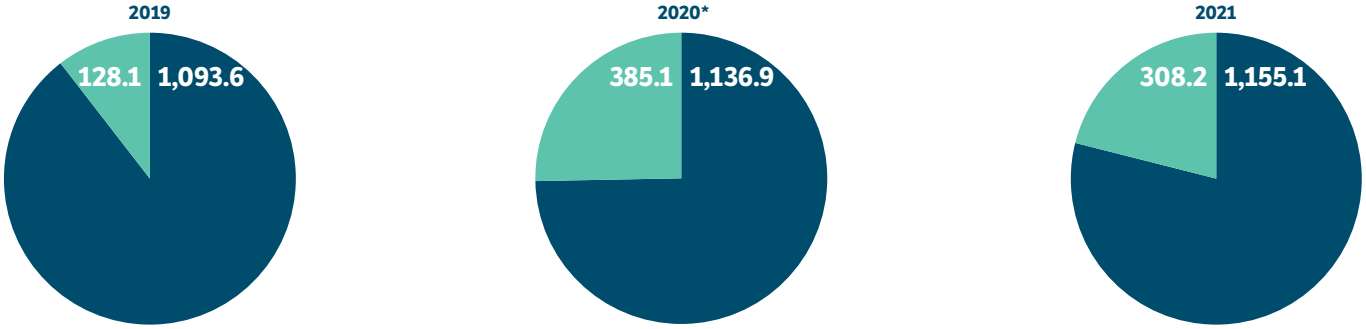
DEVELOPMENT OF ANNUAL NATIONAL BUDGET FINANCING FOR INDEPENDENT RESEARCH FUND DENMARK

Annual national budget financing 2012-2021 (current prices, DKK m.)



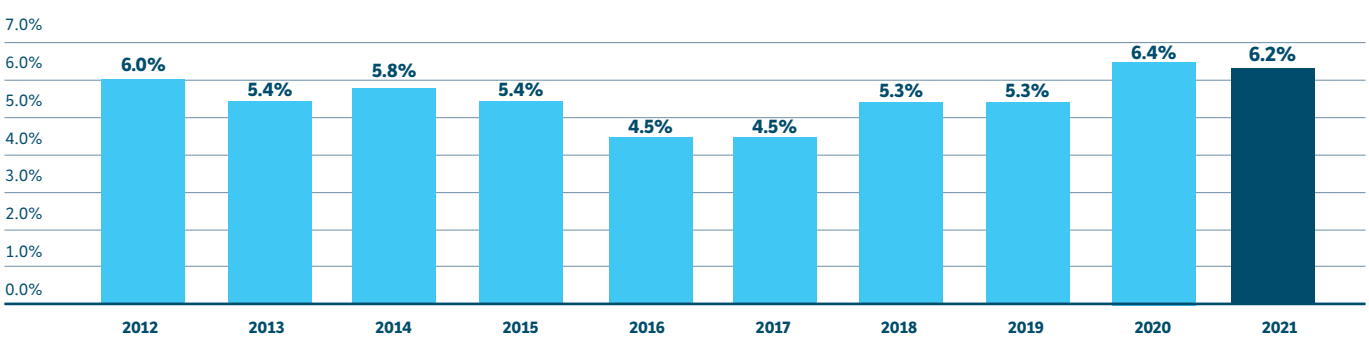
Distribution between thematic research funds and independent research funds 2019-2021 (current prices, DKK m.)

Independent research funds Thematic research funds



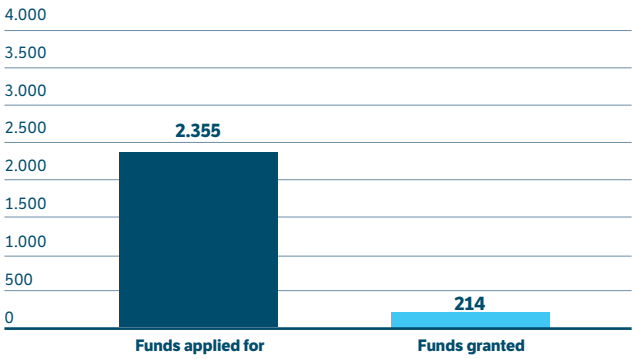
* Furthermore, Independent Research Fund Denmark was given the the task of urgently allocating DKK 22 million by the Danish Minister for Higher Education and Science in the spring of 2020.

Annual national budget financing for DFF as share of the total public research budget 2012-2021 (percentage)

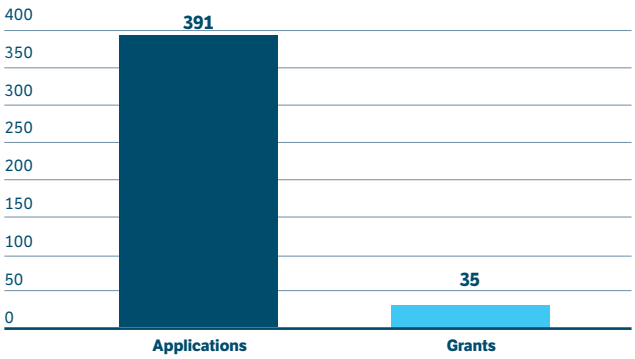


SELECTED INSTRUMENTS

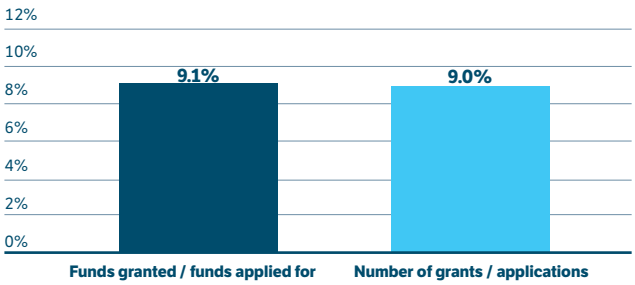
Sapere Aude: DFF-Starting Grant, funds applied for and granted 2020 (DKK m.)



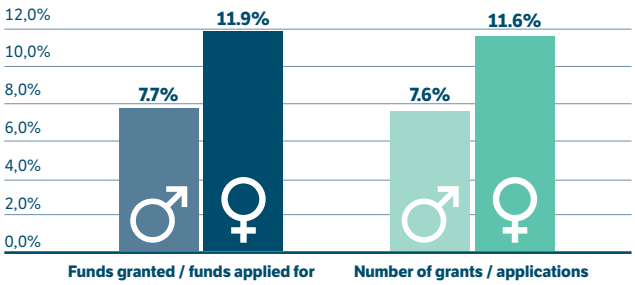
Sapere Aude: DFF-Starting Grant, applications and grants 2020 (number)



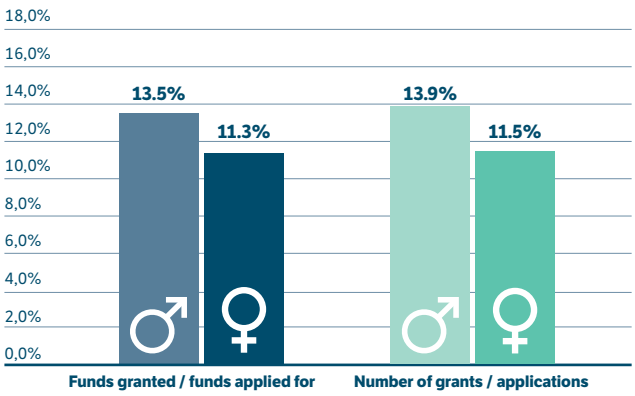
Sapere Aude: DFF-Starting Grant, success rates 2020 (percentage)



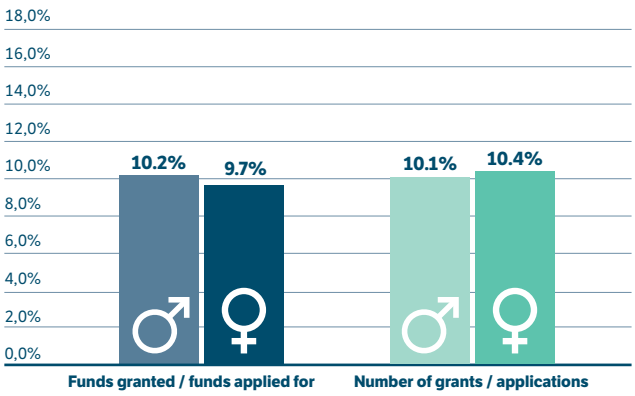
Sapere Aude: DFF-Starting Grant, success rates divided by gender 2020 (percentage)



DFF-Research Project 1, success rates divided by gender 2020 (percentage)

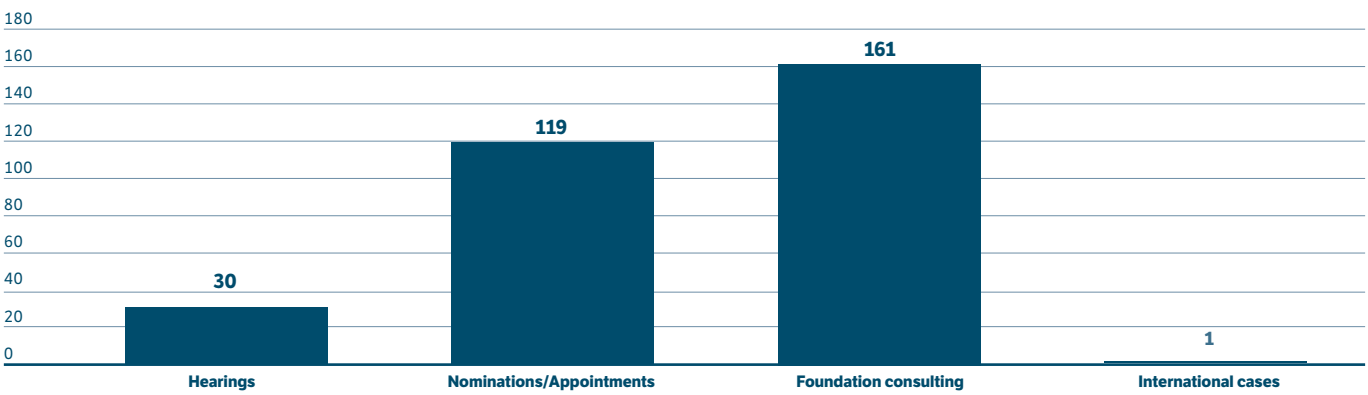


DFF-Research Project 2, succes rates divided by gender 2020 (percentage)



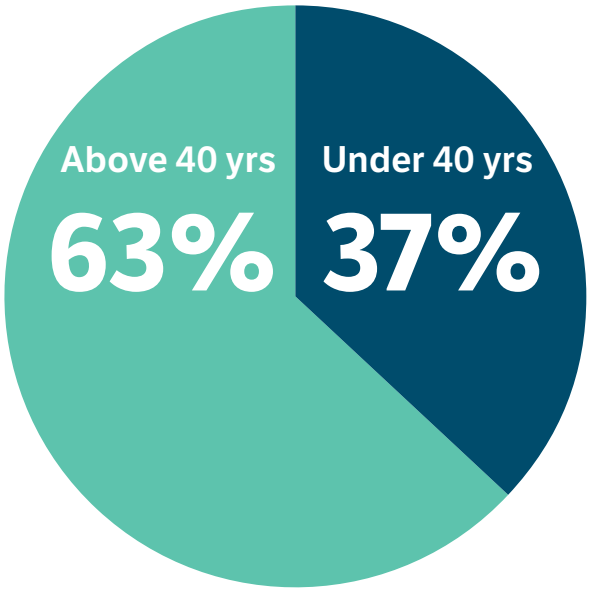
COUNSELLING

Independent Research Fund Denmark: Advisory services 2020 (number)



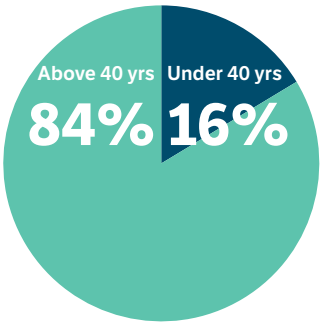
SELECTED STATISTICS

Age distribution of principal investigators 2020

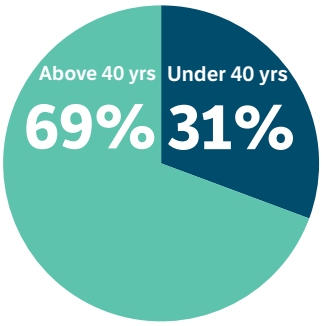


Age distribution of principal investigators of:

DFF-Research Project1 and DFF-Research Project2



Thematic research projects*



*The fund's thematic funds are awarded within the framework of DFF-Research Project1, DFF-Research Project2 or DFF-Research Project3.

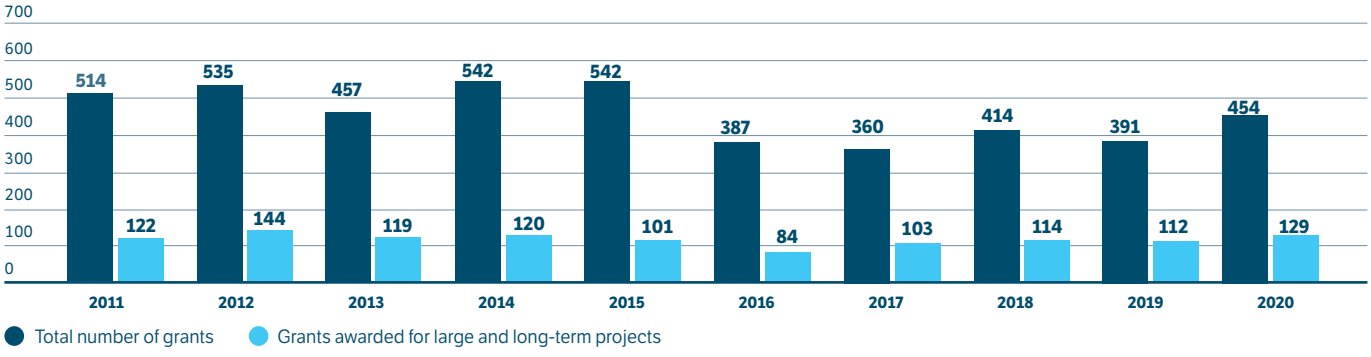
The average age of Principal Investigators is

45 yrs

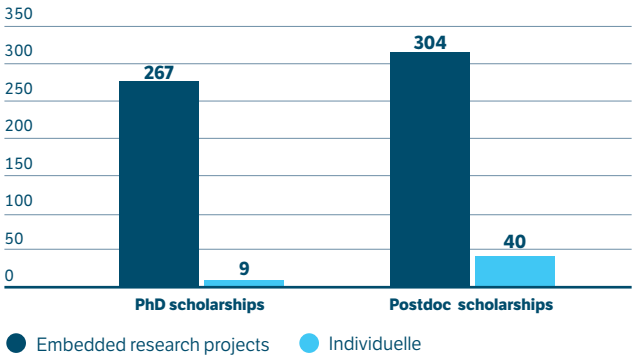
Age distribution of principal investigators 2020 divided by instrument – above and under 40 yrs

Instrument	Up to and incl. 40 yrs	Above 40 yrs	Avg. age
DFF-Research Project1	31	132	48
DFF-Research Project2	5	52	49
Sapere Aude: DFF-Starting Grant	32	3	37
DFF-International Postdoctoral Grant	37	3	33
Research networks | Humanities	1	4	46
Journals | Humanities	1	3	46
International Research Stays | Social Sciences	4	3	40
Clinician Scientist Positions | Medical Sciences	2	6	45
Pre-graduate scholarships | Medical Sciences	1	15	51
Subtotal	**114**	**221**	**45**
The Inge Lehmann programme	3	2	39
Non-university Research Education (PhD)	7	2	35
DFF-Danish ERC Programme	13	2	37
Subtotal	**23**	**6**	**37**
DFF | Thematic research: Green transition	21	45	46
DFF | Thematic research: Effects of early intervention	1	3	48
Thematic research: Work on Development of the Economic Modelling Principles	1	4	45
DFF-Research Project1 (Corona)	6	9	46
Subtotal	**29**	**61**	**48**
Total	**166**	**288**	**45**

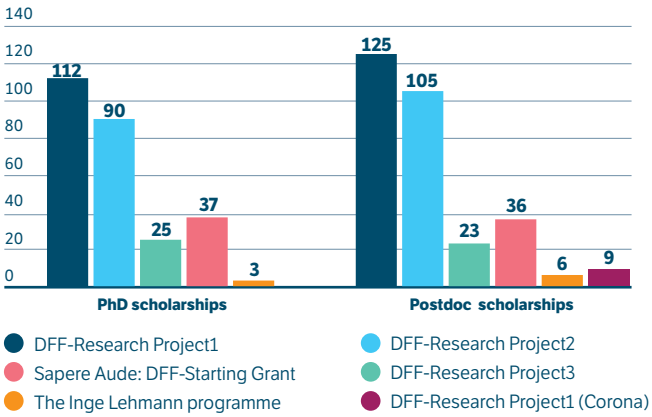
Total number of grants and grants awarded for large and long-term projects (above DKK 3 m.) 2011-2020



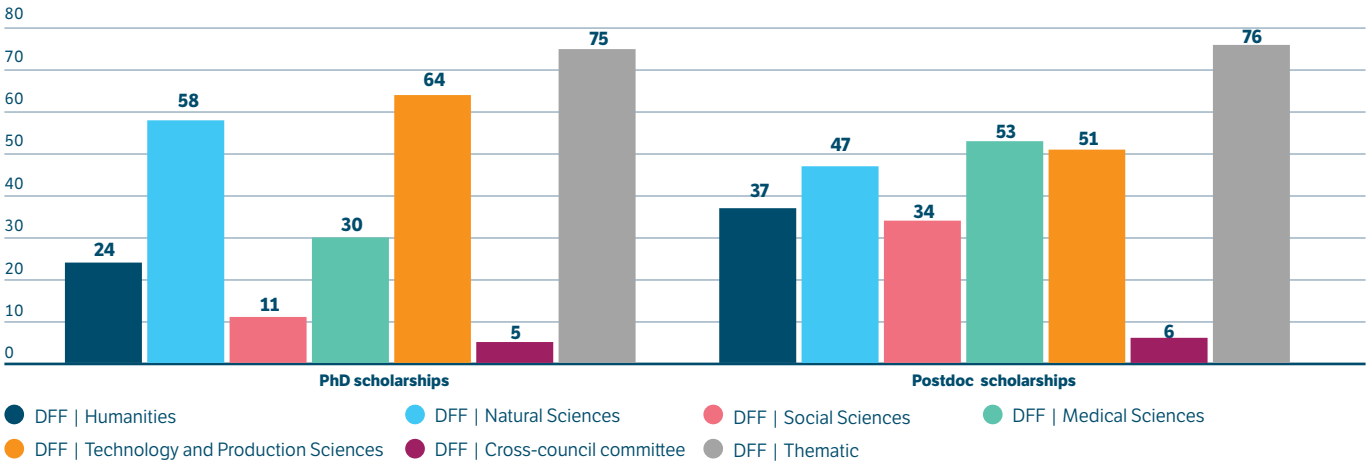
PhDs and postdocs, embedded and individual 2020 (number)



Embedded PhDs and postdocs divided by instruments 2020 (number)



Embedded PhDs and postdocs divided by councils 2020 (number)



Applications and grants with interdisciplinarity within individual councils 2020 (percentage)

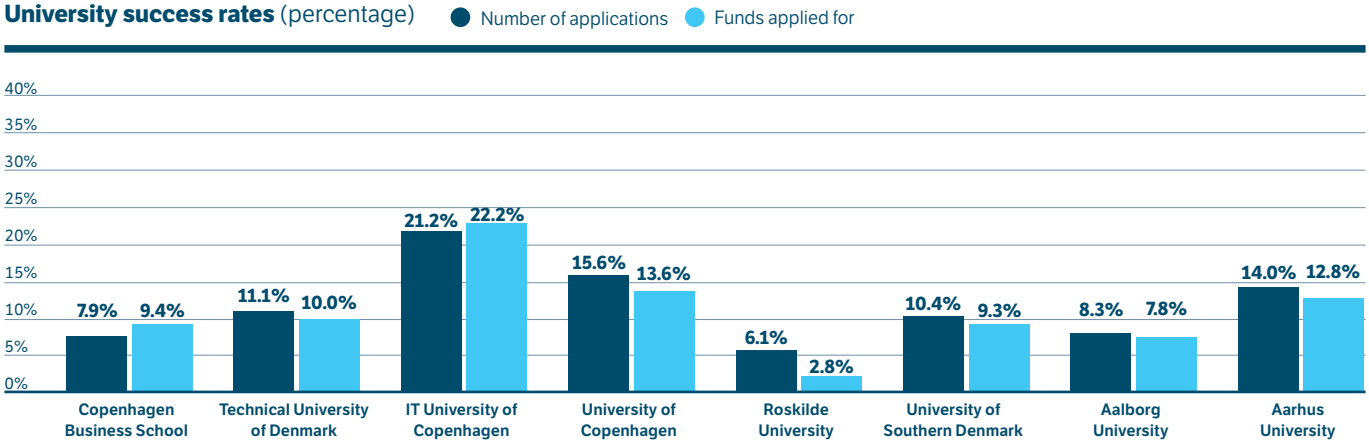
Council	Applications	Grants
DFF | Humanities	24%	28%
DFF | Natural Sciences	45%	33%
DFF | Social Sciences	60%	57%
DFF | Medical Sciences	62%	59%
DFF | Technology and Production Sciences	35%	30%
Independent Research Fund Denmark Total	**46%**	**42%**

* By multidisciplinary is meant that the applicant has indicated via OECD codes that the project falls within two or more research areas.

Applications and grants with interdisciplinarity across individual councils 2020 (percentage)

Council	Applications	Grants
DFF | Humanities	52%	48%
DFF | Natural Sciences	38%	34%
DFF | Social Sciences	30%	24%
DFF | Medical Sciences	50%	50%
DFF | Technology and Production Sciences	60%	63%
Independent Research Fund Denmark Total	**47%**	**46%**

University success rates (percentage)



Universities	Applications	Grants	Success rate, number	Funds applied for, DKK m.	Funds granted, DKK m.	Success rate, sum	Avg. grant, DKK m.
Copenhagen Business School	89	7	7.9%	344,7	32,3	9.4%	4,6
Technical University of Denmark	515	57	11.1%	2,238.9	224,6	10.0%	3,9
IT University of Copenhagen	33	7	21.2%	152,1	33,8	22.2%	4,8
University of Copenhagen	972	152	15.6%	3,799.3	515,3	13.6%	3,4
Roskilde University	82	5	6.1%	311,1	8,8	2.8%	1,8
University of Southern Denmark	307	32	10.4%	995.0	93,0	9.3%	2,9
Aalborg University	241	20	8.3%	899.3	70,2	7.8%	3,5
Aarhus University	771	108	14.0%	2,985.3	380,9	12.8%	3,5
Subtotal	**3,010**	**388**	**12.9%**	**11,726**	**1.359**	**11.6%**	**3,5**
Other institutions and organisations*	569	66	11.6%	1,283.6	129,4	10.1%	2,0
Total	**3,579**	**454**	**12.7%**	**13,009**	**1.488**	**11.4%**	**3,3**

* Other institutions and organisations include, among others, Danish hospitals (including university hospitals), archives, museums, libraries, GTS institutes, sector research institutions, other public institutions, private non-profit organisations and funds, foreign universities and foreign public institutions.

INDEPENDENT RESEARCH FUND DENMARK

FUNDS 454 researcher-initiated and pioneering research ideas with DKK 1.5 billion in 2020.

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COUNSELS the Minister for Higher Education and Science, the government and the Danish Parliament.

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