



SWEDISH FOUNDATION *for*
STRATEGIC RESEARCH

Annual Report **2021**

SSF REPORT NO 39

News & Events
in 2021

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Message from the CEO

– The launch of a new research strategy

Renewal, quality and collaboration are highlighted in SSF's Research Strategy for the period 2021–2026. These are key factors that will contribute to solving problems facing our society and the world.

SSF continues to support system change within Swedish research and to contribute to Sweden's competitiveness in an increasingly competitive world. For example, we strive to bridge basic research and research driven by demand.

In 2021, the Foundation spent SEK 691 million on more than 300 ongoing strategic research projects carried out at universities, often in collaboration with industry. New projects were granted funding

totalling SEK 647 million. The digitalisation of work at the Secretariat continues and now covers most activity areas.

Next, SSF is launching multidisciplinary research centres linked to challenges in society that offer opportunities within industry

In addition, the portfolio is strengthened through career and mobility support. It is important to support the creative exchanges brought about through direct contact between people.

Collaboration and mobility between researchers within industry, hospitals, and academia for the utilisation of research results remain central to the strategy.

SSF is also seeking leverage through grants to Swedish research groups that take a leading role within the EU's Horizon Europe research programme. Our ongoing efforts within digitalisation, life sciences and new materials boosting this process. The internationalisation of Swedish research is critical, which is why I am proud of the Foundation's programmes with Israel, Japan, and Taiwan, and most recently for Ukraine.

I feel great joy and confidence in our work.

– Laetitia motus!

PHOTO: GONZALO IRIGOYEN



Lars Hultman, CEO of SSF.

Lars Hultman



Message from the Chair

In April 2021, the Swedish parliament approved the new Research “Research, freedom, future – knowledge and innovation for Sweden”. In particular, the Bill signalled significantly increased resources for government funded research over the next four years. This is very important. Perhaps never before has research been considered more important for building new knowledge in our society, which is essential for finding solutions to current and future challenges. During a pandemic year, the importance of research and knowledge becomes particularly clear.

SSF plays a crucial role in Sweden’s research system. With our unique focus, we support excellent strategic research in areas such as (i) information and communication technology, (ii) materials sciences, and (iii) life sciences and bioengineering. SSF impacts on the system by filling a gap in the research system.

New programmes that benefit Swedish research and Swedish researchers are central to SSF, but most ground-breaking for us in 2021 was probably the launch of our new strategy for 2021–2026.

In addition to a new structure for future projects and funding calls, the economic stability of SSF is an important cornerstone of the strategy. By future-proofing the Foundation’s ability to continue to provide steady annual grants, the vital role of SSF can be secured long-term.

My time as Chair of SSF is drawing to a close, and in mid-2022 I will hand over to a new chairperson. During my time in office, I have seen how SSF has managed to support fantastic programmes benefiting Swedish researchers and Swedish research. Our positioning and rigorous methods with regard to ideas, planning, funding calls and decisions ensure the highest scientific quality in all programmes, generating exciting results of strategic national importance.

SSF plays an important role, and it has been an honour to be part of this work for many years.

Dr. Björn O. Nilsson



PHOTO: JENNY HALLENGREN

“SSF plays a crucial role in Sweden’s research system.”

Björn O. Nilsson, Chair of SSF’s Governing Board.



January 2021

PHOTO: ESS



SSF contributes to a report on ESS and MAX IV.

The CEO makes a number of decisions, and the following grants are awarded: The Royal Swedish Academy of Agriculture and Forestry for **Växtnoden** – aimed at supporting scientifically substantiated decisions within plant breeding that can lead to sustainable development, The Royal Swedish Academy of Engineering Sciences (IVA) for **Business R&D investments** – aimed at mapping the development of Swedish R&D investments, and Chalmers, for **How to create innovative and entrepreneurial environments around MAX IV and ESS?**

SSF initiates work on a new newsletter design.



February 2021



Scholarships in Taiwan.

Collaboration between industry and academia is important for the dissemination of knowledge and

technology in society. Hence, SSF is yet again launching a funding call for **SSF Industry PhD students**.

The opportunity to apply for two different scholarships in Taiwan – “Taiwan Scholarschip” and “Huayu Enrichment Scholarship” – is provided by the Taipei Mission in Sweden that administers the scholarships, which are open to applications from Swedish citizens.

SSF submits its comments on the 2020 Research Bill “Research, freedom, future – knowledge and innovation for Sweden”. SSF argues that unfortunately the Bill will not aim at quality and excellence in research.



March 2021

The highly subjective word “value” is creeping into laws that regulate research, which can have undesirable consequences for the freedom of researchers. [Read the ‘DN Debatt’ article by Lars Hultman, SSF’s CEO and Christina Moberg, emeritus professor, KTH!](#)

Through the funding call **SSF: EU Horizon Europe application support**, the Foundation is encouraging Swedish researchers to apply for EU grants within the **Horizon Europa (HEU) framework programme**.

In general, SSF provides a positive response to the report “Innovation as a driving force – from research to benefit”, and proposes that, in line with what SSF is already doing, a portion of the funding to higher education is used for the utilisation of research results.



[Opinion article on values.](#)



April 2021

Listen to “About Science” – SSF’s new podcast!

The first three of the five episodes are released. Interesting, in-depth, and odd facts. The episodes cover: “How the sleeping habits of bears can cure cardiovascular diseases!”, “Sweden plans for new nuclear power – fourth generation!” och “How to create the perfect tree for carbon dioxide capture?”. New episodes are available every other Monday.

For the eighth time, SSF launches its flagship programme **Future Research Leaders (FFL-8)**.

SSF allocates SEK 200 million to software development in **SSF Future Software Systems!**

And the first batch of SSF’s **Adjunct Professors** are appointed.



The podcast “About Science”.



May 2021

Another opportunity to apply for Strategic Mobility.

SSF pays the wages of those who wish to move for a period between industry/business/authority/hospital and academia/research institute.

Two new episodes of the podcast “About Science” are released: “How to use AI and Big Data to cure diseases” och “Batteries – the future solution to the climate crisis?”

SSF contributes to two opinion articles: in Curie Debatt about utilisation – “There is knowledge that we expect to be of use” and in Svenska Dagbladet about the electricity shortage – “Danger ahead for the certainty of delivery”.



PHOTO: MARKUS JORDO

Another opportunity to apply for Strategic Mobility.



June 2021

SSF launches its second funding call for researchers applying for grants from the EU and simultaneously announces the eleven successful grants in the first funding call.

SSF is the main sponsor of the "Future Research" insert in the Dagens Industri newspaper, which is now more crammed than ever before, featuring highly interesting research projects on everything from the fuel cells of the future to new biomarkers.

SSF adopts a new research strategy for the period 2021–2026. Highlights include collaboration between disciplines and researcher mobility between industry, academia, and society, as well as internationally. SSF's research portfolio is updated through, for instance, the launch of multidisciplinary research centres.



Strategy
brochure
2021–2026.



July 2021



Why do scientists not believe in herd immunity to Covid-19?

The report “Mapping of players within advanced materials in Sweden” is completed. Produced by Faugert & Co for the Swedish Association of Advanced Materials with support from SSF, it aims to increase the understanding of advanced materials and to demonstrate their importance in Sweden, as well as to justify more investment in materials science for a sustainable world.

A number of short films are produced in collaboration with KIT Framtid and Forskning & Framsteg.



August 2021

PHOTO: FILMFINITY



Michael Landreh's film about research that is one step ahead of cancer.

“They want to be one step ahead of cancer” – a new film is released featuring one of the researchers from the **Ingvar Carlson Award (ICA-7)** programme. Finding the perfect cure for cancer is a dream for many scientists. However, what if instead the development of cancers could be prevented! This is what Michael Landreh and his research group at the Karolinska Institutet want to achieve by investigating and controlling the action of proteins. Watch the film here! The Governing Board visits the Tjärnö Marina laboratory.

SSF joins a collaboration in telephony with Vinno-
va, Formas, Forte and the Swedish National Space
Agency.



September 2021

TV4 features Aida Zuberovic Muratovic, researcher at the Swedish Food Agency/Uppsala University and participant in SSF's funding call for Strategic Mobility. She is developing new methods for finding toxins in mussels that could come to Sweden as the climate gets warmer.

"Target the research efforts" – article by SSF's CEO Lars Hultman in Dagens industri.

Another opportunity to conduct research in Japan! SSF participates in an exchange programme with JSPS (Japan Society for the Promotion of Science), aimed at encouraging young PhDs to take part in research exchanges with leading research groups in Japan.

Seven new projects receive support for EU grant applications.



PHOTO: SOFIE PEHRSSON

TV4 features the development of new methods for finding toxins in mussels and oysters.



October 2021

SSF Research Infrastructure Fellows, RIF-2, is launched for the second time. For research to be successful, better instrumentation is constantly needed. Above all, skilled experts are needed to oversee the infrastructure. They can be, for example, research engineers, instrument managers, machine or lab managers, i.e. anyone who actively develops the tools used in research.

Twelve **Industry PhD student projects** and eight **Research Institute PhD student projects** are selected. Each of these will receive SEK 2.5 million. Grants are provided for four to five years and should result in PhD degrees.



Research Institute PhD students bringing basic research into applications



November 2021

The funding call for Lise Meitner's grant for Israeli-Swedish research collaboration is a collaboration between SSF and Israel's Ministry for Innovation, Science and Technology. SEK 50 million is spent jointly on applied research projects.

The "Collaboration Conference for Cyber Security" is organised by SSF and Vinnova. The conference is a boost to the collaboration between ongoing cyber security projects that are receiving grants from one of the two funding organisations.

In a response to the report "Increased focus on the research infrastructure of the future", SSF shares the views of the author. A new organisation is needed for the planning of research infrastructure of particular



Lise Meitner's grant for Israeli-Swedish research collaboration.

national interest, with focus on better prioritisation, more precise governance and a long-term perspective.



December 2021

Four projects in the funding call **Food, Feed and Forestry products** share a grant of SEK 120 million. The funding call is a multidisciplinary bioengineering initiative focusing on plant breeding with the long-term goal of increasing Swedish self-sufficiency and exports, as well as reducing the climate impact.

For the fifteenth consecutive year, grants are awarded for **SSF Strategic Mobility (SM 2021)**. SEK 10 million will be distributed between nine projects. The aim of the programme is to give researchers the opportunity to develop by spending some time in a different environment, moving from academia/research institute to industry/authority/hospital, or vice versa.

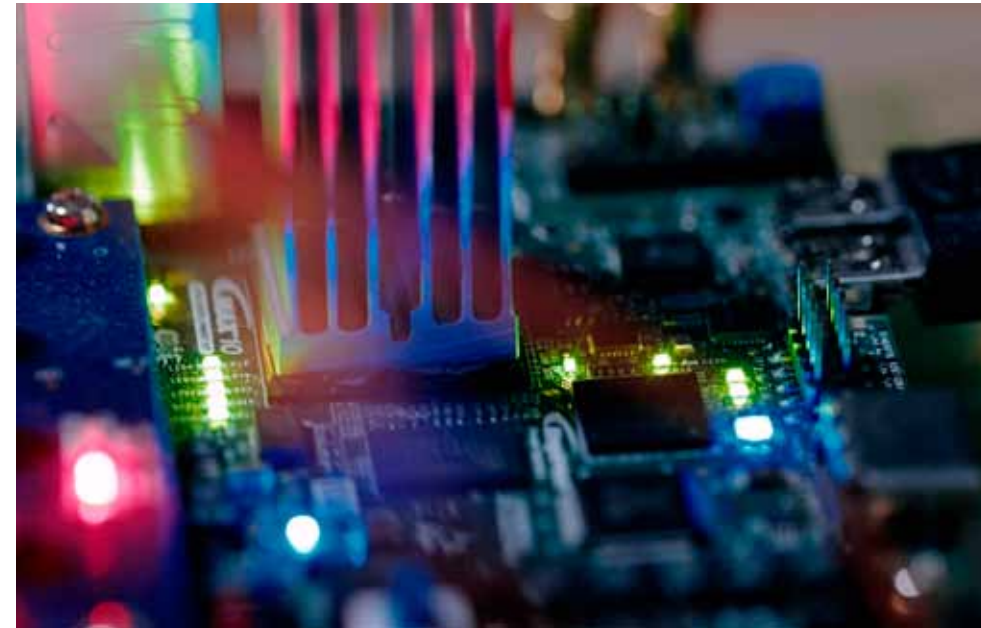


PHOTO: MARKUS JORDÖ

One of the Strategic Mobility projects.



Funding Calls and Decisions 2021

Funding Calls

February	Industry PhD students 2021 (ID21)
	EU application support (EU21)
April	Future Software Systems (FUS21)
	Future Research Leaders (FRL-8)
	Strategic Mobility 2021 (SM21)
October	Research Infrastructure Fellows 2 (RIF-2)
	SwedNESS Postdoc and Repatriation (SNP21)

Funding Decisions

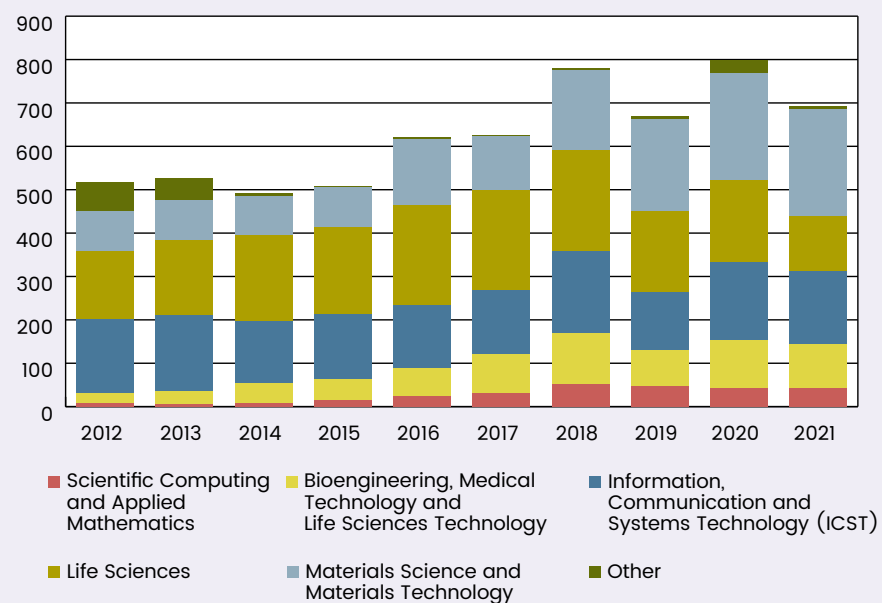
April	Adjunct Professor 2020 (APR20)
	IRC stage 2 following half-time evaluation (IRC15)
October	Research Institute PhD students 2020 (FID20)
	Industry PhD students 2021 (ID21)
	EU application support (EU21)
December	Food, Feed, and Forest 2020 (FFF20)
	Strategic Mobility (SM21)



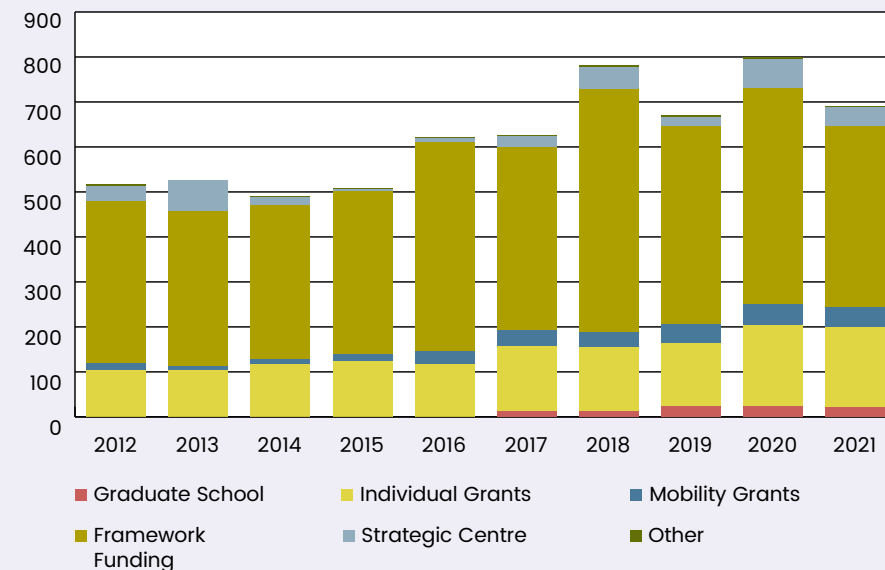
Distribution of Grants

The graphs show grants by SSF during the past ten years according to type of grant, research area and university.

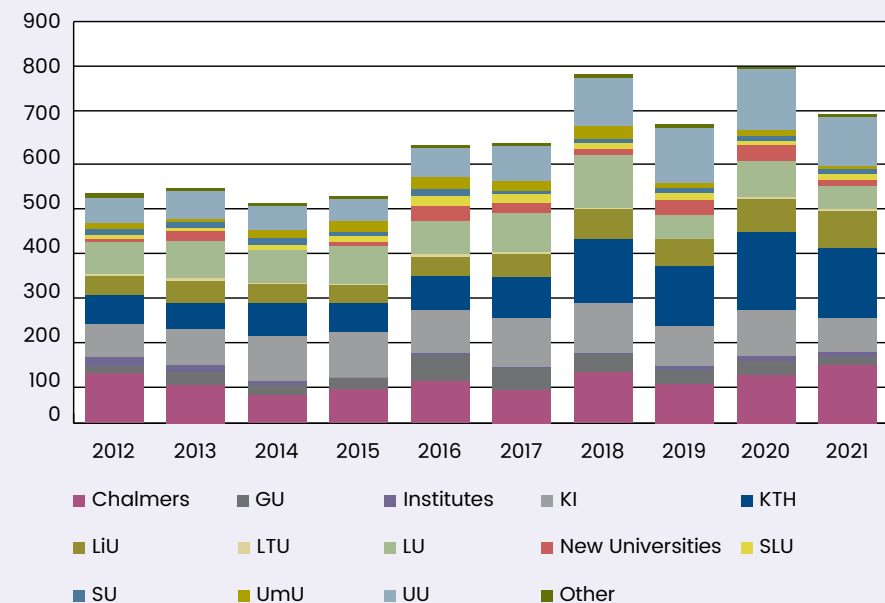
Payments per Research Area (MKR)



Payments per Grant type (MSEK)



Payments per Administrative Organisation (MSEK)



2021 Research Films

An SSF film about finding toxins in mussels is featured by TV4. More Ingvar Carlson Award (ICA) films are produced, as well as a film promoting Strategic Mobility..



Finding the Blowfish toxin in Swedish mussels.

Aida Zuberovic Muratovic at the Swedish Food Agency/Uppsala University is developing new methods for finding toxins in mussels. [Watch the film here!](#)



Damaged nerves can be replaced by soft electronics.

Soft electronics can be implanted in the body, helping people with nerve damage. [Watch the film featuring Klas Tybrandt from Linköping University here!](#)



They use the body's good bacteria to fight diseases.

Juan Du is studying how good bacteria in our bodies protect us from infections. [Watch the film here!](#)



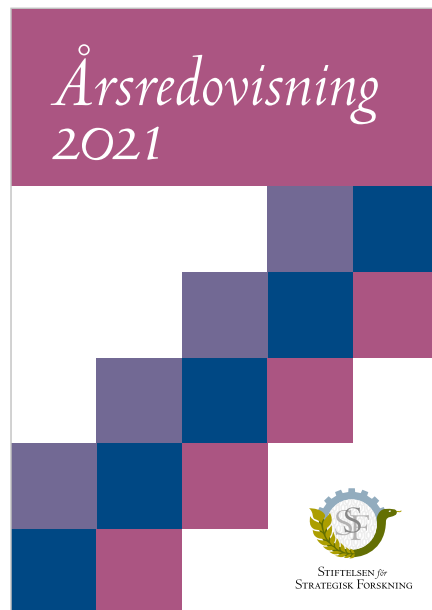
The fungi that can capture carbon dioxide or distribute drugs.

Ken Inge at Stockholm University is developing MOFs (metal-organic frameworks). [Watch the film here!](#)

[View more films featuring SSF research projects here!](#)



Annual Accounts 2021



The Foundation's capital is made up of funds transferred to the Foundation in 1994 following a decision by the Swedish government.

By careful management of these funds over the years, the Foundation had funds totalling SEK 13,1 billion on 31 December 2021, after the distribution of research grants worth SEK 16,5 billion during the period 1994–2021.

[Read the full Annual Accounts here.](#)



Message from the Chair of the Asset Management Committee

2021 was yet another dramatic year in the financial markets, this time driven by a strong recovery in the global economy in the wake of the slowing pandemic. Compared with both the weak growth in 2020 and real terms, economic growth was strong, contributing to a strong labour market and world trade at record levels. Stock markets grew quickly in line with positive company results driven by the rapid recovery, in many parts reaching new record levels. However, at the same time we started to see clear signs of overheating as shortages of components, logistics bottlenecks and escalating energy prices forced inflation upwards. In the US, inflation exceeded a sky-high 7 percent, but Sweden's 3.9 percent can also be considered an historic record. Hence, towards the end of the year, we saw interest rates rising and central banks becoming increasingly clear in their message that the heavy subsidies provided during the pandemic would shrink

For SSF, 2021 was a fantastic year, in which we reached new milestones. The annual return was as high as 22.5 percent, resulting in an average annual return of 8.1 percent in real terms since the start in 1994. At the end of the year, the value of the Foundation's managed assets also peaked at over



SEK 13 billion, Swedish shares and real estate being the main contributors. During 2021, we have increased exposure to unlisted assets in Private Equity, Private Debt, as well as real estate. In the latter segment, we ended the year with a strategically large and important investment, increasing our ownership in the property company Stenvalvet as one of three owners was bought out. Thus, public properties continue to make up a significant part of the portfolio.

Ann Grevelius



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SSF's Governing Board



First row from left: Björn O. Nilsson, Chair, Ursus Innovation AB; Björn Ottersten, KTH; Cecilia Holm Wallenberg, Lund University; Charlotte Brogren, Alimak Group AB; Gösta Lemne, Ericsson.

Second row from left: Hans Rydstad, Carnegie; Katarina Gårdfeldt, Swedish Polar Research Secretariat; Kerstin Johannesson, Gothenburg University; Magnus Berggren, Linköping University; Claes Wohlin, Blekinge Institute of Technology.

For information regarding board memberships and other interests of the members of the Board, the CEO and members of the Asset Management Committee, please contact SSF's Secretariat.



About the Foundation

- Supports research and research training in engineering, medicine, and natural sciences in order to strengthen Sweden's future competitiveness.
- Promotes the establishment of a greater number of Swedish research centres of the highest international class.
- Builds bridges between basic research and the utilisation of research results.
- Funds several hundred research projects at universities – typically in collaboration with industry and research institutes.
- Distributes career grants to prominent research leaders, with emphasis on younger talents.
- Focuses on targeted areas such as Information and Communication Technology, Materials Development and Life Sciences and their associated technologies.
- Promotes interdisciplinary collaboration, the utilisation of research results and the infrastructure of research, and mobility between academia and industry, nationally as well as internationally.
- Annually distributes grants worth around SEK 700 million.

