

2019 Annual Report



This report is a performance report in accordance with Swiss GAAP FER 21.

Title page

In 2019 Professor Nicola Spaldin, Professor of Materials Theory at ETH Zurich, was awarded the Marcel Benoist Swiss Science Prize. Federal Councillor Guy Parmelin, Chairman of the Marcel Benoist Foundation, awarded her the prize at a ceremony in Bern on 7 November 2019.

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Ladies and gentlemen



Since 1920, the Marcel Benoist Foundation has awarded the Swiss Science Prize annually to outstanding scientists whose work – as Marcel Benoist put it in his will – "is of great importance to human life". The Marcel Benoist Foundation has always had a good instinct for awarding the prize, as is demonstrated by the eleven Marcel Benoist laureates who went on to win the Nobel Prize. In 2019, another Marcel Benoist laureate, Professor Michel Mayor, was awarded the Nobel Prize. Once again, congratulations!

The last hundred years have been marked by scientific progress, as perhaps in no century before. The research achievements honoured by the Marcel Benoist Foundation are exemplary proof of this progress – in all scientific disciplines. While the Swiss Science prize was initially awarded for medical achievements in particular, such as those of the first two prizewinners, Professor Maurice Arthus and Dr Conrad Brunner, it was later regularly awarded to scientists from other research areas. As an example, the prize in 1985 was awarded to Dr Richard R. Ernst for his contribution to the development of nuclear magnetic resonance spectroscopy, or the prize in 2008 awarded to Professor Ernst Fehr for his research into behavioural economics. The Foundation's website lists all the prizewinners with a brief description of their work. I would recommend that you take that stroll through the history of science in Switzerland in the 20th and 21st centuries.

Even after a hundred years, the work of the Marcel Benoist Foundation is still of great importance, and thanks to the support of the donors, the Foundation has new impetus for its second century. By awarding the Swiss Science Prize, we are helping to ensure that research also receives attention from the general public. In a bid to further encourage the exchange of information with society, we are launching a new project for our centenary; we will be organising workshops where our prizewinners present their research to young people to stimulate their interest in science. In addition, by awarding the two most important science prizes in Switzerland at a ceremony organised with the Latsis Foundation, we are ensuring that science receives even more public attention. Information on both projects is available in this annual report and on the Foundation's website.

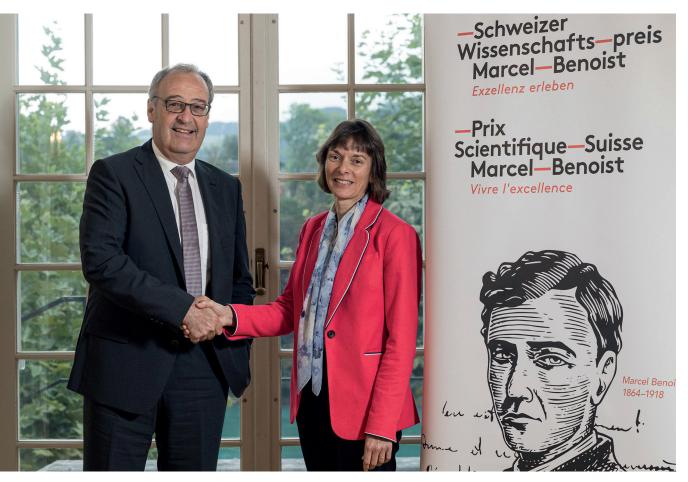
I would like to take this opportunity to thank all those who have contributed to the success of the Foundation. This success story would not have been possible without the dedication of the members of the Board of Trustees, the universities and our donors. Many thanks!

Federal Councillor Guy Parmelin Foundation chair

2019 prizewinner: Professor Nicola Spaldin

Basic research for new technologies

In 2019, Nicola Spaldin, Professor of Materials Theory at the ETH Zurich, was awarded the Marcel Benoist Swiss Science Prize – for her pioneering research in multiferroics. With her research, Nicola Spaldin has laid the foundation for a new technology of ultrafast and energyefficient data storage.



Federal Councillor and Chairman of the Marcel Benoist Foundation, Guy Parmelin, congratulates Pro fessor Nicola Spaldin at the award announcement on 5 September 2019

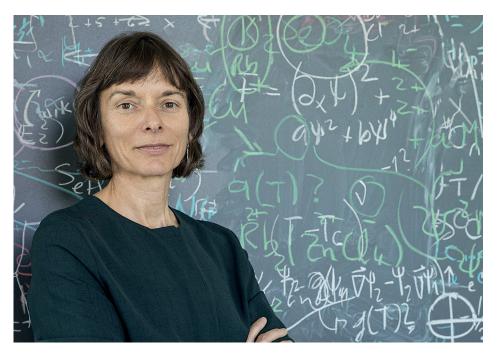
Multiferroics are a new class of materials that respond to both magnetic and electric fields, a combination that does not generally occur simultaneously. This makes multiferroics promising materials that could, for example, replace silicon in future computer chips.

Research into multiferroics dates back to the mid-twentieth century, but development ground to a halt for fifty years due to a lack of suitable materials. As a young scientist, Nicola Spaldin revitalised the field of multiferroics by using theoretical analysis and computer simulations to understand why multiferroics are so rare and to design new multiferroic materials. One particular focus was on bismuth ferrite, a crystal composed of bismuth, iron and oxygen, which retains its multiferroic properties even at room temperature.

Nicola Spaldin's pioneering work has paved the way for the development of electronic devices with entirely new architectures and greater energy efficiency. Potential applications include ultrafast computers, tiny data storage units and precision medical measuring instruments.

Nicola Spaldin was born in England in 1969 and studied natural sciences at Cambridge University. In 1991, she moved to California where she obtained a PhD in chemistry from UC Berkeley in 1996. She then completed a postdoctoral fellowship at Yale University. She went on to work as an assistant professor at the University of California in Santa Barbara from 1997 to 2010, becoming a full professor in 2006. In 2011, she moved to the ETH Zurich, where she has since been working as Professor of Materials Theory. Prof. Spaldin has received numerous awards in teaching and research, including the Körber European Science Prize in 2015 and the L'Oreal/ Unesco Award for Women in Science in 2017.

Interview with **Professor Nicola Spaldin**



"It is refreshing to see how much importance Switzerland attaches to science and engineering research and education. I very much appreciate working in such an exceptional environment, where my profession is appreciated!"

Contact

Professor Nicola Spaldin ETH-Zurich, Professor für Materials Theory +41 44 633 37 55 nicola.spaldin@mat.ethz.ch

Further information

https://theory.mat.ethz.ch/

In 2019 you were awarded the Marcel Benoist Swiss Science Prize. What does this award mean to you?

Of course it's a tremendous honour to join the list of distinguished researchers that have received the Marcel Benoist prize through its long and rich history. It is also really refreshing to see how much importance Switzerland attaches to science and engineering research and education. I very much appreciate working in such an exceptional environment, where my profession is appreciated!

The Marcel Benoist Swiss Science Prize is awarded for excellence in research that benefits human life. In which areas in particular do you think your research could be applied?

My research develops materials with new properties, which device physicists then use to build microelectronic devices that use far less energy. It's so convenient to use technology these days that often we forget about the environmental impact – a web search on your smart phone for example uses as much energy as making a slice of toast! And, already the carbon footprint of information technologies far exceeds that of aviation. So, the development of more efficient devices is an essential part of climate action.

Federal Councillor Guy Parmelin has described you as a role model for the entire scientific community, and in particular for young scientists, because of your curiosity and perseverance. What advice would you give young scientists?

Oh dear, it makes me feel very old to be giving advice! But, maybe the advice is the same for all young people, not just scientists – figure out what you are passionate about and then pursue it enthusiastically! For me that is being a researcher and an educator, but for everyone it is something different.

What projects are you currently working on and what are your next goals?

We would like to make a room-temperature superconductor – a material that conducts electricity at normal temperatures and pressures without any resistance. Such a material would allow us to transport energy between locations without any losses, which would be geopolitically transformative. At the moment, it's not even clear that such a material is possible, and I will be almost as happy if we can understand the behaviour of electrons in solids well enough to explain why it can't be done.

What projects are you currently working on and what are your next goals?

There are so many superb researchers in Switzerland and I am happy that I don't have to make that decision! But I look forward very much to meeting next year's winner.

Note: The interview was conducted in writing by the Executive Secretary of the fondation

Foundation activities in 2019

In addition to the awarding of the Marcel Benoist Swiss Science Prize, the activities of the Marcel Benoist Foundation focused on preparations for Marcel Benoist Foundation's centenary in 2020.

Prizewinner selection and awards ceremony

In 2019, the selection of the prizewinner was again organised by the Swiss National Science Foundation (SNSF) on behalf of the Board of Trustees. In an open nomination procedure held at the beginning of 2019, the research community in Switzerland was invited to submit nominations. The SNSF and an international panel of experts applied an innovative process to make their selection, choosing Professor Nicola Spaldin from a total of 15 nominations. The choice of the 2019 prizewinner was confirmed by the Board of Trustees at the plenary session on 26 August 2019.

The selection of the prizewinner was again based on the principle of rotation, which ensures that all scientific disciplines are taken into account. Last year, nominations could be submitted from the fields of mathematics, natural sciences and engineering.

Nicola Spaldin was presented to the public as the prizewinner on 5 September 2019. Various media outlets – including the Neue Zürcher Zeitung, the Tamedia newspapers, Swiss radio and television SRF and Le Temps – subsequently reported on the Marcel Benoist Swiss Science Prize and the 2019 prizewinner. A luncheon was held at the Beatrice von Wattenwyl Haus in Bern on 5 September, attended by representatives of the Foundation, its donors and prizewinner Nicola Spaldin.

The awards ceremony took place on 7 November in the Bernerhof in Bern. The formal ceremony opened with a speech by Federal Councillor Guy Parmelin, who emphasised the importance of science and research for our society. Professor Roser Valentí, and Professor Matthias Egger, President of the National Research Council of the SNSF went on to give laudatory speeches praising Professor Nicola Spaldin for the scientific quality of her work. Science journalist Olivier Dessibourg moderated the entire event.

Preparations for the centenary year

The year 2020 will be marked by the centenary of the Marcel Benoist Foundation. One hundred years after the first prize was given to the immunologist Maurice Arthus, the Marcel Benoist Swiss Science Prize will once again be awarded in the field of biology and medicine.

Preparations for the centenary have been in full swing since 2019 and the Board of Trustees has done important groundwork for the event.

To celebrate the centenary, the 2020 awards ceremony will for the first time be organised jointly with the Latsis Foundation, which awards its annual National Latsis Prize, the most prestigious Swiss science prize for researchers under 40. The Swiss science prizes will be awarded at the Bern City Hall on 4 November 2020.

The Marcel Benoist Foundation also attaches great importance to making the research of our prizewinners, and science in general, more accessible to the general public. In particular, it would like to attract young people into science. For this reason, the Marcel Benoist Foundation is cooperating with the Swiss Youth and Science Foundation (Schweizer Jugend forscht) and the science Olympiads in its centenary, to run a workshop for the first time in which the prizewinner will present their research to a group of teenagers. The participants will then each have the opportunity to develop the research further. The workshop will be run by experts in the field.

Nobel Prize for laureates of the Marcel Benoist Swiss Science Prize

The Marcel Benoist Swiss Science Prize is regarded as the Nobel Prize of Switzerland. Eleven Marcel Benoist prizewinners have gone on to receive the Nobel Prize. In 2019, another Marcel Benoist prizewinner was awarded the most prestigious scientific prize in the world. Last year, Professor Michel Mayor together with Professor Didier Queloz received the Nobel Prize in physics, for the discovery of an exoplanet orbiting a solartype star. The Marcel Benoist Foundation had already awarded the Swiss Science Prize to Professor Michel Mayor for this research in 1997. Congratulations!

Members of the Board of Trustees

At the end of 2019, the Board of Trustees of the Marcel Benoist Foundation was newly elected for the beginning of January 2020. At the awards ceremony, Professor Christian Leumann, First Vice Chairman of the Foundation, applauded the work of the members of the Board of Trustees stepping down. Outgoing members are: Professor Adriano Aguzzi as Representative of the University of Zurich, Professor Anik de Ribaupierre as Representative of the University of Geneva, Professor Michele Parrinello as Representative of the University of Italian Switzerland, Professor Paul Richli as Representative of the University of Lucerne and Professor Jérôme Pousin as Representative of the French Ambassador to Switzerland. The foundation would like to thank the outgoing members for their dedication over the past years, and welcomes the newly elected members to the Board of Trustees. The new members are: Professor Martin Baumann as Representative of the University of Lucerne, Professor Christa Dürscheid as Representative of the University of Zurich, Professor Brigitte Galliot as Representative of the University of Geneva, Mr Renaud Lallement as Representative of the French Ambassador to Switzerland and Professor Federica Sallusto as Representative of the University of Italian Switzerland.

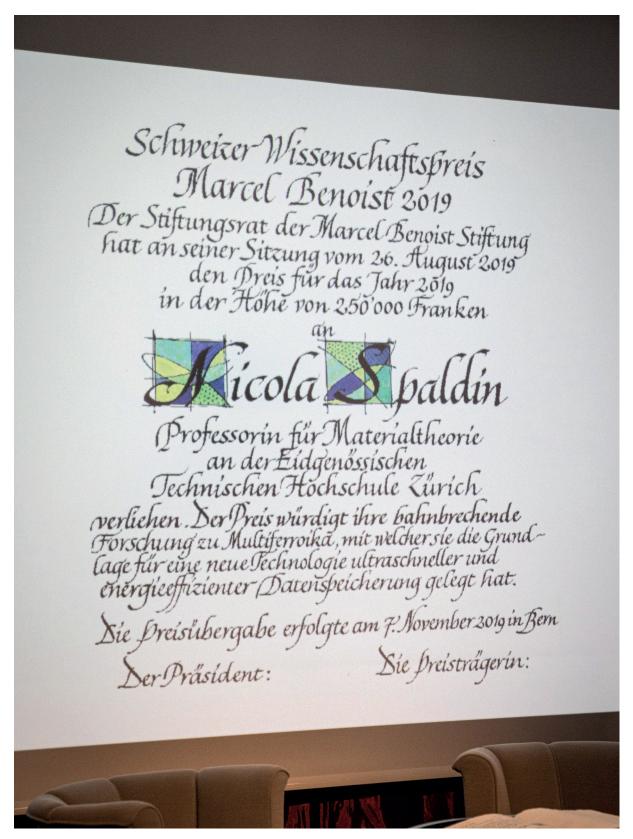
Impressions from the 2019 award ceremony



Federal Councillor and Chairman of the Marcel Benoist Foundation Guy Parmelin opens the awards ceremony.



The 2019 prizewinner, Professor Nicola Spaldin, speaks about her research on multiferroics.



The 2019 prizewinner is entered in the Marcel Benoist Golden Book

Many thanks!

Nearly 100 years ago, Marcel Benoist created the basis for the Marcel Benoist Foundation. Since 2017, new donors have helped to secure the future of the Swiss Science Prize and increase the Foundation's assets considerably.

We would like to thank all our donors for their valuable support. Our thanks also go to those who do not wish to be named here.

Private individuals

Martin Haefner
André Hoffmann
Max Rössler
Stephan Schmidheiny
Hansjörg Wyss
Walter Inäbnit
Ernst Thomke
Daniel Gutenberg
Babette Herbert

Foundations and companies

Vontobel Foundation Schindler Group Accenture Foundation

QIAGEN N.V., Peer Schatz, in memoriam Gottfried Schatz, 1992 Benoist prizewinner

Zurich airport AG

'Perspectives' Foundation (SwissLife)

Patronage Committee and Friends

The members of the Patronage Committee act as ambassadors for the Marcel Benoist Swiss Science Prize, helping to increase its visibility and to raise public awareness about the importance of top-level research for Switzerland. They also encourage further partners to commit to supporting the prize. The solid basis upon which the Foundation now rests is thanks not only to its donors but also to the valuable support of former federal councillor Johann N. Schneider-Ammann. The Foundation is delighted that Mr Schneider-Amman will continue to promote the objectives of the Marcel Benoist Foundation as honorary chairman of the Foundation.

The Friends of the Foundation include further sponsors of the Marcel Benoist Swiss Science Prize, reflecting the broader support for the award, which is of such importance to research in Switzerland.

Information on the Patronage Committee and Friends can be found at www.marcel-benoist.ch.

The Marcel Benoist Foundation

Foundation purpose

The Marcel Benoist Foundation was established on 19 November 1920. By accepting Marcel Benoist's legacy, the Confederation committed itself to respecting the founder's wish – to fund an annual prize to promote scientific research which is awarded to a Swiss scholar or a scholar resident in Switzerland with the most useful invention, discovery or study in the sciences that is of particular relevance to human life. The prize is awarded in different disciplines on a rotating basis.

Board of Trustees (Last update: end of 2019)

Federal Councillor Guy Parmelin Head of the Federal Department of Economic Affairs, Education and Research EAER, Chairman of the Board of Trustees

Prof. Christian Leumann Representative of the University of Bern, first vice chair

Prof. Joël Mesot Representative of the Confederation, second vice chair

Prof. Martine Rahier Representative of the University of Neuchâtel, assessor

Prof. Adriano Aguzzi Representative of the University of Zurich

Prof. Dominique Arlettaz Representative of the University of Lausanne

Prof. Martin Brown Representative of the University of St Gallen

Prof. Anik de Ribaupierre Representative of the University of Geneva

Prof. Michael N. Hall Representative of the University of Basel

Prof. Jean-Pierre Montani Representative of the University of Fribourg

Prof. Michele Parrinello Representative of the University of Italian Switzerland

Prof. Jérôme Pousin Representative of the French Ambassador to Switzerland

Prof. Paul Richli Representative of the University of Lucerne Prof. Michäel Unser

Representative of the Ecole polytechnique fédérale de Lausanne (EPFL)

Prof. Wendelin Werner

Representative of the Eidgenössischen Technischen Hochschule Zürich (ETH)

The trustees are appointed by the Federal Council. Any interests of individual members are publicly listed (federal extraparliamentary commissions).

Foundation committee

Federal Councillor Guy Parmelin, Chair

Prof. Christian Leumann

Prof. Joël Mesot

Prof. Martine Rahier

Investment committee

Prof. Martin Brown, Chair

Prof. Joël Mesot

Prof. Paul Richli

Secretariat

The Foundation secretariat is part of the State Secretariat for Education, Researchand Innovation SERI. The secretary is a SERI employee.

Raphael Noser, Foundation Secretary

Finance secretariat

Since November 2017, the Marcel Benoist Foundation has outsourced the management of its finances and its annual report, which is drawn up in accordance with Swiss GAAP FER 21.

Von Graffenried AG Treuhand, Bern

Patrick Rüttimann, certified accountant, member of the executive board

Auditors

Following the reorganisation of the Marcel Benoist Foundation, the Board of Trustees appointed Unico Thun AG in Thun as its new auditors. The company audited the financial accounts for the first time in 2017.

Supervision

Federal Supervisory Board for Foundations, Bern

Bank details

Donations in Swiss francs:
Postfinance account
89-32730-0
IBAN CH73 0900 0000 8903 2730 0

Annual financial statement

BALANCE SHEET as at 31 DECEMBER	2019	2018
ASSETS	CHF	CHF
PostFinance AG, current account	207'929.66	134'512.83
Zürcher Kantonalbank, current account	1'001'128.49	199'943.10
Zürcher Kantonalbank, asset management	297.81	38'326.97
account		
Cash and cash equivalents	1'209'355.96	372'782.90
Federal Tax Administration, witholding tax	20'521.61	22′728.89
Other short-term receivables	20′521.61	22'728.89
CURRENT ASSETS	1'229'877.57	395'511.79
Securities	14'423'123.21	9'988'384.10
Financial investments	14'423'123.21	9'988'384.10
FIXED ASSETS	14'423'123.21	9'988'384.10
TOTAL ASSETS	15'653'000.78	10'383'895.89

LIABILITIES	CHF	CHF
Deferred income	134'489.38	58'062.00
SHORT-TERM LIABILITIES	134'489.38	58'062.00
Restricted funds	784'000.00	917′000.00
FUND EQUITY	784'000.00	917′000.00
Unrestricted funds	14'734'511.40	9'408'833.89
ORGANISATION EQUITY	14'734'511.40	9'408'833.89
TOTAL LIABILITIES	15'653'000.78	10'383'895.89

OPERATING STATEMENT	2019	2018
	CHF	CHF
Unrestricted donations	3'910'000.00	3'450'000.00
Restricted donations	10'000.00	1'060'000.00
Total donations	3'920'000.00	4'510'000.00
0.1	2501000.00	3501000 00
Prize money	-250'000.00	-250'000.00
Prizewinner selection and award ceremony	-104'330.23	-138'059.63
Project-related expenses	-354'330.23	-388'059.63
Repositioning, Fundraising	-3'267.15	-107'577.60
Fundraising/general marketing expenses	-3'267.15	-107'577.60
33 3 1		
Board of Trustees fees	-138.00	-583.25
Finance secretariat	-22'466.25	-23'712.80
Auditors	-2'692.50	-2'692.50
Other administrative expenses	-8'028.35	-6'458.30
Administrative expenses	-33'325.10	-33'446.85
Operating result	3'529'077.52	3'980'915.92
operating result	3 323 077.32	3 300 3 13.32
Price gain on securities	1'707'043.53	-757'757.18
Portfolio management costs	-32'337.82	-34'829.40
Investment controlling/consulting costs	-10'770.00	-10'785.00
Bank interest and fees	-335.72	-228.06
Financial result	1'663'599.99	-803'599.64
Dogult hafaya shanna in fired annity	E14021C77 F4	2/477/246 20
Result before change in fund equity	5'192'677.51	3'177'316.28

OPERATING STATEMENT	2019	2018
	CHF	CHF
Result before change in fund capital	5'192'677.51	3'177'316.28
(carried over)		
Allocations to restricted funds	-10'000.00	-1'060'000.00
Withdrawals from restricted funds	143'000.00	143'000.00
Change in fund capital	133'000.00	-917'000.00
Annual result (before allocations to	5'325'677.51	2'260'316.28
e.g. withdrawals from organisation		
capital)		

The consolidated statement of accounts was drawn up in accordance with the Swiss GAAP FER 21 accounting standards and audited by Unico Thun AG.

Governance and working methods

The Marcel Benoist Foundation to promote scientific research, based in Bern, is exempt from federal and cantonal taxes due to its non-profit status.

The Foundation's Articles of Association are drawn up by the Board of Trustees. The Board makes strategic decisions regarding the Foundation and ensures that the purpose of the Foundation is met. The Board of Trustees works on a voluntary basis.

Asset management is governed by the Foundation's investment regulations. The financial assets are invested in the medium to long term by an investment committee with a view to achieving security and a sustainable return.

The accounting records and financial statements are audited by Unico Thun AG. The Foundation is supervised by the Swiss Federal Supervisory Authority for Foundations.

Further information on governance and working methods can be found at www.marcel-benoist.ch > Pledge Excellence > Tax-related and legal issues.

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Contact

Marcel Benoist Foundation Foundation secretariat c/o State Secretariat for Education, Research and Innovation SERI

info@marcel-benoist.ch Tel. +41 58 461 60 30

www.marcel-benoist.ch We look forward to hearing from you.