SWISS POLAR INSTITUTE

Annual Report 2022

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Testimonials

SWISS POLAR INSTITUTE

Annual Report 2022

Foreword

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What happens at the poles does not stay at the poles!

Extreme events in 2022 that triggered unprecedented glacier melt in Switzerland and devastating floods in Pakistan brought new realisation about the speed of climate change and its impact on society.

A study published in 2022 showed that seven out of nine so-called 'tipping points' (critical thresholds at which small changes can have irreversible consequences for global climate) are located in the ice sheets, oceans and permafrost of the polar regions. Facilitating the study of these regions lies at the core of the Swiss Polar Institute's (SPI's) mission.

To understand climate mechanisms and to improve our Earth system models, scientists need to access polar regions for ground, sea and atmosphere experiments, and long-term monitoring. Co-producing knowledge with indigenous communities is key to sustainable development. More than ever, the SPI is committed to supporting this process, helping the Swiss scientific community make an impact by contributing to global mitigation and adaptation strategies.

2022 saw the launch of the first series of ambitious interdisciplinary SPI Flagship Initiatives in Greenland and in the Pamir region of Central Asia. They will provide new opportunities to generate unique data and address pressing scientific questions, while creating visibility for Swiss scientists.

Generating access opportunities for the Swiss polar community is another core mission of the SPI. In 2022, new bilateral agreements were concluded with Greenlandic, German, Canadian and Japanese organisations. Thus, despite the challenging geopolitics, the Swiss community will gain access to the networks and polar research infrastructure of these partners from 2023.

Strong partnerships will also enable Swiss scientists to contribute towards the goals and research efforts of the recently announced 5th International Polar Year in 2032-33.

We are proud that 2022 saw the realisation of a number of SPI goals related to its status as a national research infrastructure and its increasingly structuring role in the Swiss research landscape.

To turn our ambitions into reality, we are indebted to the members of the Foundation Board for their continued support, to the SPI institutional and philanthropic funders for their trust, as well as to the members of the Swiss and international polar communities who serve on our Advisory Board and evaluation panels. We express our gratitude and look forward to continued collaboration in 2023.

Gabriela Schaepman-Strub Scientific Director

Danièle Rod Executive Director A New agreements with international organisations +80%

Increase in SPI Exploratory Grant applications

78+

Antarctic Circumnavigation Expedition publications

1.8 Million CHF in research funds disbursed

659

Field days of SPI Flagship Initiatives 652 Participants in SPI events

11 Swiss institutions hosting SPI grantees 57%

Early-career scientist grantees

1,154 Children in Swiss Polar Classes

28 Grants awarded for projects 50% Women grantees

296 Entries in Swiss Polar Class drawing contest

1 Funding schemes

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The Swiss Polar Institute supports Swiss researchers with funding schemes targeted to their needs. In addition to annual calls for proposals, namely the Polar Access Fund, the SPI Exploratory Grants and the SPI Technogrants, funding is also offered through the PolARTS programme and for field and summer schools related to polar topics.

The consortia of the two SPI Flagship Initiatives selected in 2021 carried out their first successful field seasons in 2022. These large multi-annual programmes will run until 2026. 2022 also saw the selection of four new projects within the framework of PoIARTS. This is the second time that Pro Helvetia, the Swiss Arts Council, and the SPI have issued a call for proposals to support collaborations between the arts and polar sciences. The annual calls for proposals for other funding schemes also took place.

A major development in 2022 was the sharp increase in the application rate (almost double) for the SPI Exploratory Grants, with numbers beyond those pre-COVID. This is clearly a sign of normalisation in terms of travel and fieldwork.

SPI funding schemes

- SPI Flagship Initiatives
- Polar Access Fund
- SPI Exploratory Grants
- > SPI Technogrants
- > PolARTS
- Field and Summer Schools

SPI Flagship Initiatives

The SPI Flagship Initiatives are multi-annual programmes focused on one polar region, combining science and technology projects from different disciplines and institutions. The funding targets field campaigns (logistics, safety, etc.), data management, outreach and coordination, thereby providing temporary infrastructure for a Swiss-led polar research programme.

The first two SPI Flagship Initiatives were launched in 2022 and will continue to run until 2026. After the successful first field season in summer 2022, with well over 600 days spent in the field by programme participants, sample and data analyses are now well underway back in Switzerland. The programmes currently involve 80 researchers from 14 Swiss institutions, with numbers steadily increasing as more students and collaborators join the teams.

The PAMIR Flagship aims to characterise the current state of the cryosphere in the Pamir Mountains, as well as its impacts on ecosystems, hazards and water resources.

The programme consists of six research clusters that aim to: (1) extract an ice core to unlock a climate archive of the past millennium; (2) assess the distribution and state of permafrost; (3) measure the mass balance and accumulation of glaciers at a regional level; (4) establish the link between microbial adaptation and a rapidly changing cryosphere; (5) disentangle regional cryospheric hazards by understanding glaciological and permafrost drivers; and (6) unravel the lost history of Soviet cryospheric research in the Pamirs. The GreenFjord Flagship aims to create process understanding of how climate change affects fjord ecosystems in southern Greenland and how perturbations propagate to biodiversity and livelihoods.

The programme consists of six research clusters that will: (1) investigate processes of glacier calving and iceberg export; (2) provide constraints on the delivery of nutrients and organic carbon through rivers and streams; (3) investigate the consequences of glacial retreat on nutrient dynamics and biological productivity within the fjord; (4) assess feedback mechanisms of fjord emissions on atmospheric composition and cloud formation; (5) evaluate the relationships between changing conditions in the fjords and biodiversity using eDNA; and (6) work with the local community to understand the effects of environmental changes on livelihoods.

PAMIR Flagship

"PAMIR: From ice to microorganisms and humans – Toward an interdisciplinary understanding of climate change impacts on the Third Pole" is an interdisciplinary programme aiming to characterise the current state of the Pamir cryosphere, as well as its impacts on ecosystems, hazards, and water resources. The Flagship, led by Francesca Pellicciotti (WSL) and Martin Hoelzle (University of Fribourg), consists of six research clusters that investigate diverse aspects of climate-induced changes in the region.

Supplying water to an otherwise arid region, the Pamirs are one of the most important mountain water towers globally. However, the status of the cryosphere in the region is particularly uncertain. This is due to the lack of measurements since the collapse of the Soviet Union and to the unique diversity of icy landforms it contains, which lead to complex streamflow regimes and geohazards.

More information: https://pamir-project.ch/

Ascending the Fedchenko glacier to revisit the abandoned USSR Gorbunov research station during the 2022 PAMIR field season. © 2022 Evan Miles, all rights reserved

GreenFjord Flagship

"GreenFjord: Greenlandic Fjord ecosystems in a changing climate – Socio-cultural and environmental interactions", led by Julia Schmale (EPFL), aims to create process understanding of how climate change affects fjord ecosystems in southern Greenland and how perturbations propagate to biodiversity and livelihoods.

Accelerated climate change profoundly impacts southern Greenland fjord ecosystems and livelihoods as a result of atmospheric warming, changing vegetation and precipitation patterns, and enhanced glacier melt. Increased meltwater fluxes also affect marine ecosystem functioning and nutrient circulation, which in turn affect the marine food web with cascading effects on biodiversity. Fjords are particularly vulnerable because they lie at the nexus between the cryosphere, ocean, land, atmosphere and biosphere.

More information: https://greenfjord-project.ch/

Aerial view of the town of Narsaq in southwestern Greenland. © 2022 Lionel Favre, all rights reserved

Polar Access Fund

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The Polar Access Fund enables early-career researchers to undertake a (first) field trip to a polar region or a remote high-altitude area. The research conducted during the field trip needs to become part of an existing overarching project and be related to the issue of climate change.

2022 saw the fifth round of the Polar Access Fund call for proposals, which was open from November 2021 to mid-January 2022. Funding of up to CHF 20,000 per proposal was available. An evaluation panel comprised of members with different expertise evaluated the proposals received and recommended seven projects for funding. A total of CHF 83,523 was granted to researchers from four different research institutions (see table on p.12).

Four projects involve research in the Arctic and three target fieldwork in a high-altitude area. Countries in which the fieldwork will be carried out include India, France, Greenland, and the Canadian Arctic.

During 2022, the constraints on international mobility resulting from the COVID-19 pandemic were greatly eased. This led to a fieldwork-intensive year. All the Polar Access Fund grantees who had had to postpone their fieldwork during 2020 and 2021 were able to carry out their field campaigns. Among the seven grantees from 2022, six had already gone into the field by the end of the year.

Constraining the extent of the southern Greenland Ice Sheet during past interglacial periods

Anne Sofie Søndergaard (ETH Zurich), early-career researcher and Polar Access Fund grantee, carried out a field campaign in South Greenland over the summer of 2022.

Anne Sofie's project aims to constrain the extent of the southern Greenland Ice Sheet during past interglacial periods, so as to reveal its sensitivity to past climate changes. To this end, she studies the content of cosmogenic isotopes formed within minerals of surface rocks by the collision of cosmogenic ray particles during periods when the rocks are not covered by ice. During her fieldwork, she collected sediment samples from which she is isolating quartz and measuring the isotope content.

Aerial view of the margin of the Greenland Ice Sheet. © 2022 Anne Sofie Søndergaard, all rights reserved



SPI Exploratory Grants

The SPI Exploratory Grants are a funding mechanism dedicated to established Swiss-based researchers active in polar regions, including the Third or Vertical Pole such as the Andes and Himalayas. The grants support the launch of new ideas or collaborations, and fund fieldwork and logistics. They can be used to complement the funding of initiatives supported by larger funders (e.g., SNSF, EU).

In August 2022, the SPI issued the fifth call for proposals, which was open until October 2022. On the recommendation of an external panel of experts, the SPI funded six projects to a total of CHF 245,530 (see table on p. 12). This was a significant increase from the amount committed in 2021. The previous maximum award per project of CHF 40,000 was increased to CHF 75,000. The SPI decided to increase the total funding due to the almost doubling of applications.

Of the six 2022 SPI Exploratory Grants, four projects will be carried out in the Arctic, one in the Antarctic and one will focus on the Himalayas.

In parallel, four groups that had obtained support in previous years managed to carry out fieldwork to collect data and samples in different areas of the Arctic, such as Greenland, Northern Canada and Svalbard. Another project secured samples from the Antarctic continent.

Mackenzie Delta lake sediments – Records of recent permafrost thaw?

To investigate whether the changing climate has already affected the fluxes and characteristics of materials exported by the Mackenzie River, Lisa Bröder (ETH Zurich), SPI Exploratory Grant recipient, and her colleagues collected lake sediment cores near Inuvik, a town on the East Channel of the Mackenzie Delta in Canada.

The abundant shallow lakes in this area are regularly flooded by the river. The lake sediments therefore record what is transported by the river, providing information on changes occurring within the river's watershed. Lisa aims to investigate whether the lake sediments show evidence of mobilisation of the vast stores of carbon held in the permafrost of the watershed. The sedimentary archives collected during the fieldwork are now being analysed in Switzerland. They will also help to assess the rate of permafrost thaw in the Canadian Arctic.

Lisa Bröder and colleagues during fieldwork on a frozen lake in the Mackenzie Delta. © 2022 Maarten Lupker, all rights reserved



SPI Technogrants

The SPI Technogrants support the development of technologies relevant for research in polar regions and other extreme environments. They can also be used to improve and adapt technologies to extreme environments, including field testing. Unlike other SPI funding schemes, the SPI Technogrants are open to Swiss-based researchers at all levels, from Master's students to senior scientists, including those working in the private sector.

In August 2022, the SPI issued the fourth call for proposals, which was open for two months. In order to align the grants with the SPI Exploratory Grants and to support more projects, the funding cap per project was reduced from CHF 100,000 to CHF 75,000.

Following an evaluation of the submitted proposals by an external panel, a total of CHF 150,000 was allocated to three projects (see table on p. 12). Although not exclusively supporting research in the Third Pole, the technologies to be developed in these projects will be very useful in high-altitude and alpine regions.

The COVID-19 pandemic did not affect SPI Technogrants to the same extent as other research funded by the SPI, as they are generally less reliant on fieldwork. Although supply-chain disruptions delayed some work packages, the different projects largely managed to reach their goals. This is reflected in the fact that all projects selected for funding in 2019 have now been completed and the 2020 projects are in their final stages.

A smart autonomous CTD probe for small naval platforms

Conductivity, temperature and depth (CTD) probes are used to establish temperature and salinity profiles in bodies of saltwater. A recurring difficulty in deploying CTD probes is the need for a stable, stationary floating platform. This requirement leads to significant vessel downtime costs and biases caused by the inevitable drift while deploying the probe.

Peter Gallinelli (HES-SO), SPI Technogrant recipient, and his colleagues are developing an automatic, towable and adaptable CTD probe. By towing it behind a vessel, a significantly larger area of the sea can be covered in a given time. A hydrodynamic mechanism controlling successive up and down cycles allows the probe to monitor the entire water column.

Lake trials in September 2022 confirmed the ability to perform controlled dive cycles when the probe was trawled at boat speeds of up to 5 knots using a simple and robust mobile ballast system.

Fully assembled probe during testing at the towing tank facility in September 2022. © 2022 Ruiliang Lin, all rights reserved



PolARTS

PolARTS is a joint initiative created by the SPI and Pro Helvetia, the Swiss Arts Council, to stimulate exchange between polar sciences and the arts. The initiative supports tandems composed of an artist and a polar scientist who engage with topics and research linked to polar regions over a period of 12-18 months. The artist may additionally request support for a field trip to polar regions or remote high-altitude areas in the framework of the scientist's fieldwork.

In 2021, Pro Helvetia and the SPI issued the PolARTS call for proposals for the second time. Submitted proposals were subsequently evaluated in spring 2022 by a panel of experts comprised of polar scientists and arts practitioners.

The call for proposals generated a great deal of interest, highlighting once more the popularity of this kind of transdisciplinary collaboration. There were more high-quality proposals than anticipated and in response, the SPI and Pro Helvetia agreed to support four tandems, one more than initially planned (see table on p. 13).

The tandems have since started their work and meet on a regular basis in different locations. Three tandems have already been to the field, with further field trips planned. PolARTS grantees also regularly meet to exchange experiences and discuss avenues for transdisciplinary collaborations.

The beauty and the tragedy: Dismantling the myth of icy landscapes

Taking their contrasting perceptions of icy landscapes into the field, Céline Ducret, multidisciplinary artist, and Stefan Fugger, PhD candidate in glacio-hydrological modelling (ETH Zurich and WSL), researched and documented the role of glaciers as an iconic, tangible source of information about the state and history of our climate. Focusing on the question of what a 'true' source of information is, they challenged each other's artistic and scientific viewpoints during visits to glaciers.

In September 2022, Céline Ducret joined a large expedition party carrying out a field campaign in the Pamir, Tajikistan. The work is ongoing, as they will now synthesise their activities in a material archive that proposes an alternative way of understanding a transforming environment.

Céline Ducret's photographic record of the Pamir field campaign in which she took part. © 2022 Céline Ducret, all rights reserved



2022 SPI GRANTEES

GRANTEE	INSTITUTION	PROJECT	REGION	FINANCIAL SUPPORT (CHF)
SPI FLAGSHIP INITIATIVES				
Francesca Pellicciotti and Martin Hoelzle	WSL and University of Fribourg	From ice to microorganisms and humans: Toward an interdisciplinary understanding of climate change impacts on the Third Pole (PAMIR)	• High-altitude Pamir, Central Asia	1,500,000
Julia Schmale	EPFL	Greenlandic Fjord ecosystems in a changing climate: Socio-cultural and environmental interactions (GreenFjord)	• Arctic Narsarsuaq, Greenland	1,500,000
POLAR ACCESS FUND				
Max Polzin	EPFL	Modelling Spatio-temporal Transformations of Glacial Moulins	• High-altitude Chamonix, France	11,000
Boris Ouvry	University of Zurich	Morphological evolution of ice cliff backwasting in relation to supraglacial channel incision on Satopanth Glacier, Indian Himalaya	• High-altitude Satopanth Glacier, India	11,010
Annabel Payne	ETH Zurich	A multi-tracer investigation of ocean circulation and ventilation in the Canada Basin	• Arctic Canada Basin USA and Canada	7,690
Anne Sofie Søndergaard	ETH Zurich	Constraining ice cap extents during past interglacials from cosmogenic exposure dating and inverse modeling	• Arctic Narsarsuaq Greenland	17,083
Nazimul Islam	University of Lausanne	Dendrochronological fieldwork in the Eastern Himalaya	• High-altitude North Sikkim, India	19,500
Lisa G.T. Leist	ETH Zurich	Transient Tracers in the Davis Strait	• Arctic Davis Strait Greenland and Canada	11,240
Aurélie Hendrick	University of Lausanne	Contemporary working relationships between humans and sled dogs in Greenland	• Arctic West coast Greenland	6,000
SPI EXPLORATORY GRANTS				
Jakob Assmann	University of Zurich	Leveraging eDNA for the rapid assessment of plant biodiversity of Arctic tundra landscapes	• Arctic Victoria Island Nunavut, Canada	47,530
Horst Machguth	University of Fribourg	Measuring Firn Hydrology and Ice Dynamics at the Greenland Runoff Limit (MAGNOLIA)	• Arctic Greenland Ice Sheet, K-Transect	64,000
Lucie Malard	University of Lausanne	ArcticAir	• Arctic Northwest Passage, Iceland and USA	20,000
Thomas Pilgrim	University of Bern	Risk of Cardiac Arrhythmias at Extreme Altitude	 High-altitude Mount Everest, Nepal 	24,000
Sabine Rumpf	University of Basel	Filling the high-Arctic gap in Europe-wide plant re-distributions during the Anthropocene	• Arctic Svalbard	40,000
Julia Schmale	EPFL	Marginal Ice Zone, Aerosol Cloud-Coupling in the Southern ocEaN with verTical observations (MIZ-ACCSENT)	• Antarctic Around 115°E and 63.8°S	50,000
SPI TECHNOGRANTS				
Martin Hoelzle	University of Fribourg	Direct-to-satellite IoT communication service scaling up remote operations around the globe (case study in Central Asia)	High-altitude	70,000
Oliver S. Schilling	Eawag and University of Basel	Development of a membrane inlet system for in-situ and continuous monitoring of noble and greenhouse gas fluxes in snowpacks & soils with a portable mass spectrometer	• Arctic, High-altitude	50,000
Gilda Varliero	WSL	UV-DNA-Tech: a technology to unravel microbial distributional patterns and activity in glaciers	High-altitude	30,000

GRANTEE	INSTITUTION	PROJECT	REGION	FINANCIAL SUPPORT (CHF)
POLARTS (2022-2023)				
Benjamin Burger, Interdisciplinary artist Lisa Bröder, Biogeoscience	ETH Zurich	Ghostscapes	• Arctic	12,500
Maëlle Cornut, Visual artist and arts researcher Gianalberto Losapio, Biodiversity Change	University of Lausanne	Intertwined destinies: glaciers and their companion species	♥ High-altitude	19,860
Céline Ducret, Multidisciplinary artist Stefan Fugger, Glacio-hydrological modelling	ETH Zurich and WSL	The beauty and the tragedy: Dismantling the myth of icy landscapes	♥ High-altitude	23,322
Marie Schumann, Visual artist Francesca Pellicciotti, Glaciology, Hydrology & Environmental Engineering	WSL	Process.Material.Memory	♥ High-altitude	25,000
KONRAD STEFFEN GRANTS				
Jürg Schweizer	WSL	Greenland - Switzerland Avalanche collaboration	• Arctic	25,000
Markus Stoffel	University of Geneva	SULEQATIGIIPPUGUT (Greenlandic for "we collaborate") – Building capacities for integrated management of natural hazards and risks in Greenland	• Arctic	25,000
VENDÉE GLOBE COLLABORATION				
Samuel Jaccard Nicolas Gruber Thomas Frölicher	University of Lausanne ETH Zurich University of Bern	Science and sailing to collect environmental data during the Vendée Globe race	• Antarctic Southern Ocean	In-kind

Field and Summer Schools

The SPI contributes to costs related to participation in field schools and training courses, with the goal of encouraging and enabling students to acquire specialised experience and knowledge.

In this funding scheme, undergraduate, Master's and doctoral students affiliated with a Swiss academic or research institution can obtain funding to participate in international field and summer schools. The programmes need to relate to topics and disciplines relevant for or associated with polar or remote high-altitude areas, or teach skills to be applied to research in these disciplines.

Since 2018, the SPI has supported six students to participate in programmes based in Norway, Austria, Canada, Switzerland and the USA. After being stalled during the COVID pandemic, this programme regained its popularity in 2022, with 5 students receiving funding to attend courses.

Gaining new experience in Alaska

In the summer of 2022, PhD student Johanna Klahold (University of Lausanne) participated in the International Summer School in Glaciology, which was organised by the University of Alaska at the Wrangell Mountains Center in McCarthy, Alaska.

"I believe that the new glaciological knowledge I gained will enable me to significantly advance my PhD project in many ways, e.g., with regards to survey planning, data analysis and interpretation. In addition, the summer school provided a unique platform for scientific exchange and to grow my scientific network."

Group photo of the 2022 International Summer School in Glaciology, McCarthy, Alaska. © 2022 Johanna Klahold, all rights reserved



2 Expeditions

The involvement of the Swiss Polar Institute in scientific expeditions offers the Swiss research community exceptional access opportunities, international collaboration and interdisciplinary exchange. Expeditions are also an excellent training ground for early-career scientists.

Arctic Century Expedition

Organised jointly by the SPI, the Arctic and Antarctic Research Institute (AARI) in Russia and the Helmholtz Centre for Ocean Research Kiel (GEOMAR) in Germany, the Arctic Century Expedition studied remote and inaccessible areas in the Kara and Laptev Seas, and on Franz Josef Land and Severnaya Zemlya in the Western Arctic. The focus was on key aspects of the atmosphere and cryosphere and the marine and terrestrial environment.

In 2022, the various groups continued their post-expedition analytical work. In October, a meeting was held in Lausanne to present early results and explore further collaborations.

Given the recent changes in Arctic geopolitics, the data collected are of immense value, as accessing these areas will be extremely difficult in the foreseeable future. The SPI has therefore decided to provide six supplementary grants to ensure the continuation of post-cruise work and guarantee optimal data sharing.

Antarctic Circumnavigation Expedition (ACE)

2016-2017

ACE was the first expedition carried out by the SPI. Although the expedition finished its journey in March 2017, participating scientific teams are still actively working on data and samples collected on board with the support of the SPI.

This long-term effort has led to substantial results, with 108 datasets compiled in the SPI/ACE Zenodo community, of which 107 are openly available. Another 15 datasets have been published on other data repositories and are referenced on the <u>SPI website</u>.

To date, the analytical work carried out on ACE data and samples has significantly contributed to our understanding of the sub-Antarctic and Antarctic regions. In total, 78 scientific papers using data collected during the expeditions have been published, 18 of them came out in 2022.











 Field and Summer School: International Geochronology Summer School, Switzerland.

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- SPI Exploratory Grant: Lichenologist and botanist Starri Heiðmarsson working on the "SUMITER" project above Zackenberg research station, Greenland.
 © 2021 Christophe Randin, all rights reserved
- SPI Technogrant: Prototype for a low-cost and robust electrical resistivity tomography monitoring system for remote permafrost environments.
 © 2022 Christian Hauck, all rights reserved
- Polar Access Fund: Scientist taking fieldwork notes for her colleagues who will collect rock samples in Greenland.
 © 2022 Anne Sofie Søndergaard, all rights reserved
- SPI Exploratory Grant: The "New Persistent Pollutants in the Arctic Atmosphere" project uses this air canister to connect to the sampling system.
 © 2022 Myriam Guillevic, all rights reserved











- Polar Access Fund: Drilling to monitor the long-term evolution of Himalayan debris-covered glaciers.
 © 2022 Marin Kneib, all rights reserved
- SPI Technogrant: The Extreme Environments Research Laboratory team looking at live data from a modular, multiplatform-compatible air measurement system in Valais, Switzerland.
 © 2021 Bertrand Rey, all rights reserved
- PAMIR Flagship Initiative: Installation of a portable, autonomous SmartStake station for mass loss tracking on Zulmart glacier in Tajikistan.
 © 2022 Tomas Saks, all rights reserved
- PAMIR Flagship participants on a GRIMM Health and Safety field course in Valais, Switzerland.
 © 2022 Eric Pohl, all rights reserved
- GreenFjord Flagship Initiative: Installation of a time-lapse camera that takes hourly pictures of Qajuuttap Sermia glacier in Greenland.
 © 2022 Dominik Gräff, all rights reserved

3 Services

Throughout the year, the Swiss Polar Institute works in close collaboration with the Swiss polar community to facilitate their work in the field and to help them benefit from the SPI's networks. In addition, a series of services have been developed to help scientists carry out their fieldwork safely and efficiently.

Health and safety in the field

Through training courses, the SPI helps Swiss research groups improve the health and safety elements of their fieldwork. These courses are led by specialised medical doctors and mountain guides from the Groupe d'Intervention Medicale en Montagne (GRIMM).

In 2022, the SPI again organised dedicated courses for first aid in the field, with a focus on the special conditions encountered in high-altitude and polar regions. Particular emphasis was put on dealing with the absence of healthcare infrastructure.

The two courses in 2022 (1-2 April and 11-12 November) were carried out in an alpine environment. Each course was open to 12 participants and both were fully booked.

The SPI also puts two customised field pharmacies at the disposal of expedition parties and offers access to expedition telehealth services. In 2022, these field pharmacies were used by research groups from three institutions. All the field campaign participants using these pharmacies also registered for the "SOS MAM" expedition telemedical service.

Data management

Investment in sound data management in the initial stages of a project can save time, aid collaboration within and among projects, and most importantly, ensure the security of data and samples.

To encourage and facilitate good data management practices, the SPI offers workshops on managing data in the field, tailored to polar and high-altitude work. Workshops cover aspects of data management from storing and backing up data, to recording metadata and preparing for fieldwork. The SPI also produced a <u>field guide</u> to support these workshops.

To provide the Swiss polar community with the latest good data management practices, the SPI represents Switzerland in international bodies such as the Standing Committee on Antarctic Data Management (SCADM) and the Arctic Data Committee (ADC).

The SPI also provides data curation and support for data publication, encouraging open access data from SPI-led expeditions, research projects and multiannual programmes. Furthermore, in the case of the Flagship Initiatives, SPI collaborates with the Swiss Data Science Center (SDSC) to leverage the interdisciplinary data collected using state-of-the-art data science approaches.

Research containers

The SPI is the co-owner of two research containers that are mostly used for atmospheric science testing and experimentation.

In 2022, the "red container" (co-owned with EPFL and ETH Zurich) was again based in Sion, serving as an interim laboratory facility while the Alpine and Polar Environmental Research Centre (ALPOLE) was being built.

The other container, known as the "white container" (co-owned with the Paul Scherrer Institute), was re-located to Sion in early 2022 from its temporary location in Zurich. The container is being used as an 'on-call' storage and testing facility that is available when needed. It will again be equipped with aerosol/cloud instruments towards the end of 2023 and will most probably be sent to India for a new research mission.

Preparing for the worst-case scenario in the field

In Arolla, over two days in November 2022, 12 researchers participated in one of the health and safety training courses organised by the SPI in collaboration with GRIMM. As usual, the training took place outside, bivouac included, and focused on hands-on first aid techniques likely to be useful in the field.

Beyond these practical elements, the course also addressed the issue of remoteness from a medical point of view and provided an overview of possible support solutions such as telemedicine services.

Health and safety training course in the Val d'Hérens, Valais. © 2022 Barbara Weith, all rights reserved



4 Outreach

In addition to strengthening collaboration in the Swiss polar community, the Swiss Polar Institute also works to raise awareness in the general public about polar science and related issues.

The SPI continued its collaborations with the Palais de Rumine and the Espace des Inventions in Lausanne, providing background support for their exhibitions "Qanga" and "Voyage en Nord", respectively. The SPI also focused on knowledge transfer to Swiss primary school children through the Swiss Polar Class. This activity has continued to grow its target audience and gain in importance in both the French- and German-speaking parts of Switzerland.

Swiss Polar Class (SPC)

Developed by the SPI in 2020, the SPC is a free educational programme centred around raising awareness of the polar regions and their fragility. Created with teachers and pupils in mind, the programme's multimedia content and lessons are fully aligned with the Swiss-German and Swiss-French primary school curricula and accessible to everyone.

The programme continued to grow in 2022, with a focus on developing new content and reaching out to more classes. Two new modules were released in 2022: In January, the "Arctic Century" module on the 2021 Arctic Century Expedition went online and in summer, the "Humans in the polar regions" module was published. Furthermore, a lot of effort was devoted to the creation of the expedition board game "Swiss Polar Class: the game", which was produced in December 2022 and made available online for download in February 2023.

In 2022, 1,154 children participated in SPC events and activities across Switzerland: 165 classes were given in the French-speaking part of Switzerland and 45 in the German-speaking part. There were 296 submissions to the annual SPC drawing contest in spring and three "Ask a polar scientist" online events, with each event bringing together 7-12 classes. The SPC partnered with the Museum Cerny and the Figurentheater Blauer Kuckuck in Bern to create two days of workshops in August, attended by four classes.

The SPC maintained a close exchange with EPFL's Science Outreach Department and held workshops at their events: "Scientastic" in June and "JOM" in November. The SPC also presented at the 28th International Polar Conference in Potsdam in May. The SPC continued to work with various cantonal education departments. In 2022, a collaboration agreement with the Children's University of Zurich was established for workshops and communication and outreach events.

Students playing "Swiss Polar Class: the game". © 2022 Swiss Polar Class

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SPI scientific events

Each year, the SPI holds events dedicated to the Swiss scientific community. In 2022, the Swiss Polar Day gathered over 150 participants from many organisations, including 12 Swiss public research institutions. Online and on-site hybrid events provided the opportunity to reach an international audience, for example, the launch event of the SPI Flagship Initiatives and a workshop on the co-production of knowledge.

Communication channels

Throughout 2022, the SPI worked to optimise its communication channels with a more streamlined approach and to this end, brought a newly designed newsletter to its community of about 1,500 subscribers. The newsletter invites readers to learn more about the SPI's activities and brings traffic to the website, which counted over 17,000 visitors (approx. 3,000 more than 2021) and 56,080 page views by the end of the year. The website was also enhanced with a more user-friendly interface for the pages devoted to funded projects, featuring an interactive map. A wealth of information is available with just a few clicks.

The SPI's social media presence also grew significantly, with 1,323 followers on Twitter, an increase of 20% compared to 2021. With 1,033 followers, the ACE Twitter account is still going strong after six years of posting and retweeting!

Explore SPI-funded projects further

The SPI's <u>Fieldnotes</u> webpages are entirely dedicated to the impressions, anecdotes and experiences of SPI funding recipients. Each blog offers unique insight on fieldwork, revealing the personal dimension of scientific research in a tangible way.

The <u>Projects Map</u> is an interactive online feature that provides a comprehensive overview of the depth and diversity of projects funded by the SPI. It offers a simple, engaging and user-friendly way to explore the SPI's extensive database. Users can choose to search for projects on the map or use the grid view of project thumbnails. Filters are available to help refine the search. Each project page includes a factsheet with a lay summary, project details (including funding amount) and a selection of photos.

Projects Map interface. © 2022 Swiss Polar Institute





SPI CONFERENCES AND EVENTS

DATE	EVENT & NUMBER OF ATTENDEES	PLACE	DETAILS
25 January	Scientific workshop on best practices in the "Co-production of Knowledge" 16	• Online	Event for early-career researchers to discuss best practices and practical tips for sharing and integrating knowledge or co-design methodologies with local/indigenous communities
7-9 March	Konrad Steffen Grant workshop 27	• Nuuk, Greenland	Swiss-Greenlandic workshop to develop collaborative projects on natural hazards, to be funded through the Konrad Steffen Grant; Co-organised with the Greenlandic Research Council
16 June	Swiss Social and Human Sciences in the Circumpolar Regions \$ 20	 Lausanne, Switzerland 	Colloquium on opportunities for collaboration and networking amongst polar SSH researchers
18 June	Launch event of SPI Flagship Initiative 45 on-site and 89 online	• Bern, Switzerland/ Online	Official launch of the SPI Flagship Initiatives, PAMIR and GreenFjord, with an international audience
23-24 June	"Cryosphere in a changing climate" – Symposium in memory of Konrad Steffen 170	Oavos, Switzerland	Co-organisation of the symposium with WSL and ETH Zurich; contribution to the science programme and plenary talk
25 August	The Swiss Polar Institute and your research	Zurich, Switzerland	Info event about SPI activities and funding opportunities; Co-organised with ETH Zurich
2 September	Swiss Polar Day 2022 ▲ 156	 Bern, Switzerland/ Online 	Annual SPI conference for the Swiss polar community with Swiss and international speakers
30 September	Workshop and annual exchange between SPI and Australian Antarctic Division 12	 Lausanne, Switzerland 	Presentation of SPI and AAD new initiatives; discussions with scientists on collaboration opportunities
12 October	Geneva Science and Diplomacy Anticipator Summit side meeting 13	• Geneva, Switzerland	SPI-organised side meeting on Swiss polar science
20-21 October	Arctic Century Expedition post-cruise meeting 26 on-site and 14 online	Lausanne, Switzerland/Online	Gathering of the expedition party to follow up and exchange on data and sample analysis

SWISS POLAR CLASS EVENTS

DATE	EVENT	PLACE	NUMBER OF PARTICIPANTS
11 January	Lesson	♀ Geneva, GE	18
31 January	Lesson	• Mels, SG	20
10 February	Lesson	Geneva, GE	25
28 March	Lesson	Payerne, VD	21
2 May	28th International Polar Conference	Potsdam, Germany	60
24 May	Lesson	 Vallorbe, VD 	21
25 May	Lesson	 Fribourg, FR 	13
May	Drawing contest	• Online	296 drawings received
30 May	Lesson	Savigny, VD	56
11 June	Scientastic	Sion, VS	30
14 June	Ask a polar scientist – "Rencontre avec un scientifique polaire"	• Online	205
24 June	Ask a polar scientist – "Frag die Polarforscherin"	• Online	134
1 July	Lesson	St. Gallen, SG	16
30-31 August	Polar workshop	Bern, BE	84
4 October	Lesson	Cugy, VD	8
19 October	Lesson	Langenthal, BE	21
10 November	Journée oser tous les métiers (JOM)	• Lausanne, VD	15
6 December	Ask a polar scientist – "Immersion en Islande"	• Online	213

SPI PARTICIPATION IN EXTERNAL EVENTS AND CONFERENCES

DATE	EVENT	PLACE	SPI CONTRIBUTION
3 February	Lecture series – Naturforschende Gesellschaft Graubünden	• Chur, Switzerland	Talk
23-26 February	Polar Symposium	• Monte Carlo, Monaco	Invited panel member
17 March	Les nations alpines dans les pôles	• Paris, France	Organisation and participation in high-level discussion panel with Olivier Poivre d'Arvor (French Polar Ambassador), Yan Ropert-Coudert (Director IPEV), Romain Troublé (TARA)
24 March	Annual APECS Switzerland Member Meeting	• Online	Short presentation of SPI activities and support to early-career researchers
25 March	UK-Switzerland cryosphere event	• Jungfraujoch, Switzerland	Presentation of SPI; discussions with UK polar stakeholders and scientists
28 & 30 March	IASC Council meeting	• Tromso, Norway	Swiss representation
31 March	Visit of the Board of UArctic	• Lausanne, Switzerland	Presentation of SPI activities and Swiss Arctic science
2-5 April	Internationale Polartagung, Deutsche Polargesellschaft	• Potsdam, Germany	Presentation of SPI; session about SPC; presentation of Arctic Century Expedition data and early results
12 April	Swiss Global Change Day	• Bern, Switzerland	SPI booth
20 April	Science & Fiction: Permafrost disrupted, Goethe Institute & Consulate General of Switzerland, Chicago	• Online	Invited panel member
20-28 April	COMNAP thematic/regional townhall meetings	• Online	Swiss representation; reporting on Swiss Antarctic activities
4 May	Swiss Committee on Polar and High Altitude Research (SKPH)	 Bern, Switzerland 	Presentation of SPI developments
12 May	Launch of "Qanga" exhibition and meeting with Danish Embassy delegation	 Lausanne, Switzerland 	Presentation of SPI and SPI-Greenland collaboration
24 May	Antarctic Treaty Committee Meeting	• Online	Part of the Swiss delegation to ATCM
27 May	European Geosciences Union conference	• Online	Oral presentation on Arctic Century Expedition
30-31 May	TARA Polar Station science meeting	• Paris, France/Online	Participation in discussions on scientific opportunities and implementation of scientific work on the TARA Arctic Drift platform
8-16 June	COMNAP expert group forums	• Online	Report on SPI involvement and Swiss Antarctic activities
14 June	"ex-de-plora" – exhibition on expeditions in the Anthropocene	• Basel, Switzerland	Invited member of discussion panel; PoIARTS presentation
21 June	Forum Kultur und Ökonomie	• Biel, Switzerland	Invited member of discussion panel; PoIARTS presentation
25-28 July	COMNAP General assembly and thematic/regional sessions	• Online	Swiss representation; reporting on Swiss activities in Antarctica
5-7 August	SCAR 2022 Conference	• Online	Swiss representation
3 October	"Des Gletschers Kern" – an exhibition on climate change and glacier retreat in Greenland and Switzerland	• Zurich, Switzerland	Invited member of discussion panel on opening night
13-15 September	EU-Polarnet2 General assembly	 Sofia, Bulgaria 	Contribution to the development of the EU-Polarnet2 project
15 September	EPFL Foundations Day	Lausanne, Switzerland	Presentation of SPI activities as a new research facility of national importance
2-7 October	3rd IPICS Open Science Conference	• Crans-Montana, Switzerland	Opening address; presentation of SPI
12 October	Geneva Science and Diplomacy Anticipator Summit	 Geneva, Switzerland 	Contribution to preparation of panel about the geopolitics of polar regions
13-16 October	Arctic Council	• Reykjavik, Iceland	SPI representation and networking

DATE	EVENT	PLACE	SPI CONTRIBUTION
18-20 October	TARA Polar Station science meeting	 Mortovun, Croatia 	Participation in discussions on scientific opportunities and implementation of scientific work on the TARA Arctic Drift platform
27 October	The Future of Research Infrastructure in the Arctic	• Brussels, Belgium	Presentation of SPI; invited panel member
28-29 October	Launch of collaboration with Oliver Heer – data collection campaign	• St Malo, France	Press/PR events
31 October - 3 November	CONNAP gateway information sessions	• Online	Reporting about Swiss 2022-2023 Antarctic activities
4 November	Annual meeting of Network Arctic Collections Switzerland (NACS)	• Lausanne, Switzerland	SPI representation
19 November	Swiss Geoscience Meeting	Lausanne, Switzerland	SPI booth; oral presentation on Arctic Century Expedition
22-23 November	European Polar Board General Assembly	• Luxembourg/Online	Annual meeting participation
24 November	Scientific colloquium – "Suisse et Monaco, partenaires pour les objectifs de l'Agenda 2030"	• Monaco	Presentation of Swiss polar science and SPI activities; discussions on potential collaborations
24 November	Swiss Commission on polar and high-altitude research (SKPH)	 Bern, Switzerland 	Presentation of SPI developments
6 December	Eu-PolarNet WP3 meeting	• Online	Discussion on EU-PolarNet developments and SPI contribution
19 December	ALPOLE building inauguration	 Sion, Switzerland 	Presentation of SPI

5 Collaboration

Collaboration with partner institutions within Switzerland and around the world is a core mission for the Swiss Polar Institute. Collaboration enables the SPI to deliver enhanced access and opportunities as well as targeted support services to the polar research community.

International collaborations

International collaboration and local networking in the field are crucial elements for safe and successful research in polar and remote high-altitude regions. The SPI seeks to deliver concrete added value through access to international research infrastructure and support of fieldwork.

Bilateral agreements and memoranda of understanding (MoU) are effective tools to strengthen ties between scientists and create new opportunities for collaboration.

At a strategic level, agreements with other polar organisations create a basis for institutional dialogue, which can lead to joint initiatives in multilateral fora. In the current global context, such agreements are also a way to deal with geopolitical challenges.

In 2022, the SPI concluded a collaboration agreement with the Alfred Wegener Institute (AWI) in Germany. As well as being the major German centre for polar and marine research, AWI is also a large operator of polar and oceanographic research stations and vessels, working both in the Arctic and Antarctic. Another agreement was concluded with the Greenlandic Research Council to further support joint projects and exchange, as well as to offer effective on-the-ground support for the numerous Swiss groups working in Greenland.

Furthermore, the SPI concluded an MoU with the Japanese National Institute for Polar Research (NIPR), cementing the long tradition of scientific collaboration between Switzerland and Japan. NIPR conducts both scientific work and operates research infrastructure in the Arctic and Antarctic.

In parallel, the SPI continued to actively engage in multilateral networks such as the Forum of Arctic Research Operators (FARO) and the Council of Managers of National Antarctic Programs (COMNAP). The SPI is also a partner in the EU-funded "EU-PolarNet2" project, which aims to co-ordinate the European Polar Research Area and is the Swiss representative in the European Polar Board.

Konrad Steffen Grants

This funding instrument was designed to provide seed money for collaborative research on the topic of natural hazards in Greenland. The Konrad Steffen Grants aim to create an active bridge between scientists and practitioners in order to increase the impact of polar science.

The Konrad Steffen Grants are an initiative of the SPI and the Greenland Research Council (NIS). In memory of Konrad Steffen, a world-renowned Swiss glaciologist who died in the field in August 2020, the Grants build on his legacy of collaborative research between Switzerland and Greenland.

The first two Konrad Steffen Grant projects began in 2022 and will run until 2024.

National collaborations

To identify and develop meaningful opportunities and services, the SPI works closely with stakeholders and initiatives related to polar and high-altitude sciences in Switzerland. A notable example is the Swiss Committee on Polar and High Altitude Research (SKPH) at the Swiss Academies of Natural Sciences. The close connection to the SKPH helps to address the needs of the scientific community.

The SPI also engages informally with other research and funding institutions in Switzerland to ensure complementarity and cohesiveness within the funding ecosystem. Beyond the research funding landscape, the SPI continued its collaboration with Pro Helvetia to promote dialogue between the arts and sciences.

Finally, the SPI works closely with the federal administration, in particular on the coordination of international collaborations and agreements but also on policy and geopolitical matters related to polar science. Both the Federal Department of Foreign Affairs and the State Secretariat for Education, Research and Innovation are represented in the SPI Foundation Board as observers.

Extreme sailing for polar research

In September 2022, Swiss sailor Oliver Heer and the SPI launched a three-year collaboration to carry out a data collection campaign from 2022 to 2025 during both the training and racing phases of the 2024 "Vendée Globe", a solo round-the-world sailing race.

Under the scientific supervision of research groups at ETH Zurich and the Universities of Bern and Lausanne, the SPI will place cutting-edge scientific instruments onboard Oliver Heer's IMOCA boat. Data collection was successfully started during the 2022 "Route du Rhum" race, in which Oliver Heer qualified for the 2024 Vendée Globe.

The Southern Ocean is a major regulator of the global carbon and energy cycle, and one of the key modulators of the global climate system. "The extreme environment of the Southern Ocean still holds many mysteries, especially with regard to its role as a sink for atmospheric CO_2 . With the novel Vendée Globe measurements, we will be able to unlock some of these mysteries," explains Nicolas Gruber (ETH Zurich), one of the scientists involved.

On board the "Oliver Heer Ocean Racing" (OHOC) boat at St Malo, the departure of "Route du Rhum" with destination Guadeloupe in 2022. © 2022 SPI



Greenland-Switzerland Avalanche Collaboration

In Greenland, basic avalanche warning exists on a local scale, but these services are based either on volunteers or on very limited resources and are not sustainable. To facilitate the development of a more efficient service, this project establishes a collaboration between avalanche management professionals in Greenland and Switzerland.

Experienced avalanche forecasters from Switzerland will work with Greenlandic practitioners to understand local challenges and discuss mitigation strategies. At the same time, observers from Greenland will participate in training courses at the WSL in Davos. The long-term goal is to give the Greenlandic professionals sufficient leverage to set up a permanent nationwide service.

The project is jointly led by Jürg Schweizer (WSL Institute for Snow and Avalanche Research SLF), Marco Marcer (Technical University of Denmark), and Alexandra Messerli (Asiaq Greenland Survey).

Avalanche researchers in Greenland investigating the stability of the snow cover. © 2022 Marco Marcer, all rights reserved

SULEQATIGIIPPUGUT (Greenlandic for "we collaborate")

In 2017, a rock avalanche in Karrat Fjord, West Greenland, caused a tsunami that flooded and destroyed nearby villages. The Greenlandic authorities evacuated 170 residents, who remain evacuated to this day.

The largest of all unstable rock slopes in the area may potentially have a landslide volume greater than ten times that of 2017, and thus could result in devastating tsunami run-up heights. Against this background, the project aims to: (1) exchange knowledge and build capacities in integrated risk management for Greenland scientists and hazard managers; (2) develop joint research proposals on natural hazards and risks, and their management; and (3) define areas for joint education of researchers, emergency responders and authorities.

SULEQATIGIIPPUGUT (Greenlandic for "we collaborate") is jointly led by Markus Stoffel (University of Geneva) and Eva Mätzler (Ministry of Mineral Resources and Justice, Government of Greenland and Greenland Research Council).

A mountain slope in West Greenland with a risk of landslide. © 2022 Joint Arctic Command, all rights reserved

6 Internal developments

The Swiss Polar Institute is a private foundation under Swiss law. As a young institution serving a dynamic community, the SPI is developing at a steady and controlled pace in order to offer optimal support while complying with its statutory obligations.

Foundation and governance

The SPI is governed by its Foundation Board. In addition to the members listed on the following page, the Board includes as observers the State Secretariat for Education, Research and Innovation, the Federal Department of Foreign Affairs, and the Swiss Committee on Polar and High Altitude Research.

An external Science and Technology Advisory Board (STAB) advises on matters related to scientific and technological developments and initiatives.

As a foundation, the SPI is subject to annual audits and to reviews by the Federal Foundation Surveillance Authority. This guarantees a high level of compliance and quality in processes and reporting.

A major milestone was achieved in December 2022 with the move of the SPI Secretariat to the ALPOLE centre in Sion (VS), a 10,000 m² building dedicated to research on alpine and polar environments. The SPI will benefit from state-of-the-art infrastructure and a stimulating work environment. It will also enable the SPI to grow and to receive international delegations and visitors, as well as to display its polar book collection.

Internal projects in 2022 concentrated on IT security, the further development of the SPI's grant management database, and communication and internal organisation. Since its inception, the SPI has offset its CO_2 emissions with MyClimate. The CO_2 impact of SPI activities is a central issue that is currently under assessment, with the aim to propose concrete measures in 2023.

Funding

In 2022, the SPI had an operating budget of CHF 3.2 million, of which CHF 1.8 million was disbursed as grants and initiatives. The remainder was dedicated to value creation through events, outreach and services, as well as to SPI staff.

The SPI is funded by the Swiss Confederation as well as by Swiss research institutions (EPFL, ETH Zurich, UNIBE, UNIL, UZH, WSL). In 2022, the funding received from the Swiss Confederation was matched thanks to financial support from philanthropic partners, in particular Frederik Paulsen and the Swiss Polar Foundation.

Additionally, the SPI is thankful to the BNP Paribas Swiss Foundation for their continued support of early-career researchers through the Polar Access Fund.

FOUNDATION BOARD

as at 31 December 2022

In 2022, the SPI Foundation Board met in April and November.

Martin Vetterli	Chair	♥ EPFL
Christian Leumann	Vice-Chair	• University of Bern
Detlef Günther		• ETH Zurich
Christoph Hegg		♥ WSL
Frédéric Herman		• University of Lausanne
Frederik Paulsen		♥ Lausanne
Elisabeth Stark		• University of Zurich

SCIENCE AND TECHNOLOGY ADVISORY BOARD (STAB)

as at 31 December 2022

In 2022, the STAB met in March and September.

Hubertus Fischer	Chair	• University of Bern
Björn Dahlbäck	Vice-Chair	 Formerly Swedish Polar Secretariat, Sweden
Jérôme Chappellaz		• EPFL; Formerly IPEV, France
Daniel Farinotti		• ETH Zurich and WSL
Dame Jane Francis		 British Antarctic Survey, UK
Philippe Gillet		♥ EPFL
Joan Nymand Larsen		• University of Akureyri, Iceland
Jennie Thomas		• CNRS, France
Naki Akçar	(SKPH delegate)	• University of Bern
Patricia Holm	(SKPH delegate)	• University of Basel

Members who left the STAB in 2022

Christian de Marliave	Editions Paulsen, France
Heini Wernli	• ETH Zurich

SPI STAFF

as at 31 December 2022

Swiss Polar Class – Project Manager Romandie
Scientific Collaborator
Scientific Collaborator; Swiss Polar Class – Project Manager Deutschschweiz
Head of Finance
Scientific Collaborator
Office Manager
Scientific Collaborator*
Executive Director
Scientific Director
Scientific Collaborator

Staff who left the SPI in 2022

John Maxwell	Web and Communication
Carles Pina Estany	Systems Architecture

*Left on 31.12.2022. Replaced by Jelena Ristic from 1.1.2023.

Testimonials

- We need a lobby for polar science."
- SPI is a strong asset in the Swiss scientific landscape as it enables work on issues critical for managing climate change."

Christian Leumann, Rector of University of Bern, Vice-Chair of SPI Foundation Board

I felt extremely lucky to be a part of this expedition. It was similar to being immersed inside a landscape, submerged by rocks, debris and ice. On the one side there was the technology to collect the data but on the other side there was us, living humans experiencing it all. The feeling of being there in this precise landscape at this precise moment, sharing this communal experience of the field was magical."

Céline Ducret, artist and PolARTS tandem partner

The event at the Cerny Museum was very exciting and informative for the children. We were amazed by the oral and written evaluations, which showed how much the children had learned and memorised, and how much they were interested in this topic."

Primary school teacher, Swiss Polar Class event

I want to acknowledge SPI's incredible support in this first year of the PAMIR Flagship. I have never experienced something like this and I also feel very lucky to have you all – my thanks to the incredible SPI team."

PAMIR scientific report

I can wholeheartedly encourage you to work with the SPI, apply for some of their grants, and thereby strengthen your links with Swiss polar science."

Heini Wernli,

ETH Zurich, Institute for Atmospheric and Climate Science

[...] thank you for your great support this year! And we look forward to working with you in the coming years."
Julia Schmale.

EPFL, Extreme Environments Research Laboratory

It is a great opportunity to apply your research in a really tough environment and contribute to polar research, thanks to SPI's Technogrants as well as their outreach and networking platforms."

Michael Pantic, ETH Zurich, Autonomous Systems Lab

I revised and deepened my knowledge of glaciology. I learned how to travel on glaciers with ropes and safely navigate in snow-covered and crevassed areas with boots and skis. I learned how to pack, organise and run a scientific expedition in a remote environment. We will present an abstract at the 2023 AGU Meeting to a broad scientific community. All of this will be relevant for applying for a doctoral position after finishing my Master's degree."

Andreas Henz, ETH Zurich, participant in the Juneau Icefield Research Program



CONTACT

Swiss Polar Institute Route des Ronquos 86 1950 Sion, Switzerland +41 21 693 76 74 secretariat@swisspolar.ch www.swisspolar.ch ♥ @SwissPolar

IMPRESSUM

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COVER PHOTO

Sunset at Avalanche Canyon on the Juneau Icefield (Alaska), taken during the 2022 Juneau Icefield Research Program. © 2022 Fabienne Meier, all rights reserved

