



Strategic Focus Area

## Personalized Health and Related Technologies

---

# 7<sup>th</sup> Call for Proposals for PHRT Projects: Overview

January 15, 2022

The ETH Board defined “[Personalized Health and Related Technologies](#)” (PHRT) in 2016 as one of its Strategic Focus Areas (SFA). After the first phase from 2017 to 2020, it approved in March 2020 a second phase of the program for the period from 2021 to 2024.

The program PHRT is focusing on core contributions by the ETH Domain institutions in the field of personalized health/medicine and personalized health technologies that are complementary to the efforts undertaken by other programs/initiatives within the ETH Domain such as the SFA [Swiss Data Science Center \(SDSC\)](#) and programs outside the ETH Domain such as the [Swiss Personalized Health Network \(SPHN\)](#). An essential goal of PHRT is to put ETH Domain institutions in a position to most fruitfully collaborate with clinical (research) partners, including those from SPHN and from leading international programs.

## Summary

PHRT realizes the goals mandated by the ETH Board by supporting research projects in the field of personalized health and by supporting young scientists at the doctoral and postdoctoral level to embark on a career in personalized health. Specifically, PHRT has created several project categories: (1) education, (2) technology translation, (3) technology platforms / centers / hubs, (4) personalized medicine/health research projects, and (5) pioneer multi-omics projects.

This present 7<sup>th</sup> call invites applicants to team up with partners at a clinical institution to submit proposals for:

- (a) Interdisciplinary doctoral, so-called **iDoc Projects**,
- (b) Interdisciplinary postdoc, so-called **iPostdoc Projects**,
- (c) Technology Translation Projects (**TT Projects**),
- (d) **Research Projects**, and
- (e) **Imaging Projects** being part of the PHRT Imaging Hub.

Project proposals will be peer-reviewed and successful projects will be able to use funding until December 2025 at the latest. Researchers and consortia of scientists from all ETH Domain institutions are encouraged to apply. Applicants are encouraged to submit project proposals that collaborate with hospitals and clinics.

**Note:** the ETH Board has ruled that PHRT funds can only be received from researchers employed at an ETH Domain institution. However, there are a few well-defined exceptions, in particular, “clinical services” to cover the expenses of hospitals and clinical partners. “Clinical services” should be limited to 20% of the total budget.

This document summarizes the general goals, scope, and mode of operation of PHRT and the intended timeline of projects. Detailed [descriptions for each proposal type](#), including [templates](#) can be found on the [PHRT](#) website.

**The submission deadline for all proposal types is April 17, 2022.**

## 1 The Strategic Focus Area PHRT

With the Strategic Focus Area Personalized Health and Related Technologies (PHRT), the institutions of the ETH Domain aim to establish and sustain their worldwide leading position in life science research, a field that is currently undergoing a drastic revolution. With the new approaches, today's medicine is being transformed into 'individualized medicine': in essence, a person's unique biological makeup will guide decisions on how to maintain and restore his or her health. These developments require new research approaches, which frequently require expertise from different fields of research. To address these challenges, PHRT is establishing projects and programs in cooperation with universities, hospitals, and other initiatives in Switzerland, notably the Swiss Personalized Health Network (SPHN), and encourages interaction and collaboration between leading international personalized medicine programs.

Advances in the life sciences and information technology (IT) allow the collection and analysis of large amounts of health-related data: clinical data, genomics and other -omics data, data from biobanks, and health data collected by individuals themselves. Using such data to optimize the medical care of each individual is the ultimate objective of personalized medicine. For the eventual assessment of projects and the PHRT program as a complete direct, successful translation of research results for the benefit of patients will be a high priority. Whereas personalized medicine focuses on individual patients, personalized health aims to use the analyzed data to benefit the population at large by identifying and tackling health risks at early stages and applying appropriate preventive and therapeutic measures.

### 1.1 Goals of PHRT

The PHRT program is concerned with technical applications, diverse types of molecular profiling (-omics technologies), information technology, statistical association methods, molecular modulation of perturbed networks, biotech and monitoring instruments, if they intend to:

1. improve the quality of healthcare delivered through earlier and better diagnosis, less invasive or more efficacious treatment options, and reductions in hospital stays/rehabilitation times in patients, with or without a focus on cost reduction, and
2. select optimized therapeutic strategies for individual patients based on their specific molecular makeup or other patient-related factors. This last element is key to the characterization of medical-related technology in the framework of personalized medicine.

The outcome of this initiative should provide significant, direct, and documentable value for patients and clinicians and foster a healthy society. All projects should accumulate clinical, medicine, and health-relevant data (e.g., in the SPHN Data Coordination Center) and exchange (i.e., they are interoperable) with interested stakeholders. Since the timeframe of the PHRT program is limited, those projects will be given preference that aims to impact clinical decisions within a short-range timeframe.

A critical aspect of this program is to foster interdisciplinary collaboration between scientists/engineers and clinical researchers. For example, Technology Translation Projects (TTP) aim to maturing technologies of any kind developed within the ETH Domain to apply them in clinics. Also, the education of the next generation of researchers is supported through interdisciplinary doctoral projects (iDoc) and interdisciplinary postdoc projects (iPostdoc).

## 1.2 PHRT project types

To meet the stated goals of PHRT, projects are expected to directly impact clinical decision-making and practice within a relatively short time frame. Therefore, close collaboration between science, engineering, and medicine is essential for the program and strongly encouraged. Furthermore, close interaction and collaboration with leading national programs such as the Swiss Personalized Health Network (SPHN) and international programs pursuing similar goals in personalized health is strongly encouraged.

The five project categories described below have been implemented. If applicable, the project types will be implemented in coordination with SPHN and SDSC:

- I. **Technology Platforms / Centers / Hubs** to generate high quality, high volume individualized molecular profiling data from patients and clinical cohorts. The generated data need to fulfill quality standards required for informing clinical decision-making. Data should be interoperable and made available via the SPHN Data Coordination Center.

Two generations of technology centers platforms are envisaged. The first generation of centers operates as a unit. The PHRT EPFL [Clinical Genome Analysis Center \(CGAC\)](#) hosted by the Genome Center as part of the Health 2030 initiative at Campus Biotech Geneva is together with its Zurich-based PHRT ETH [Clinical Proteotype Analysis Center \(CPAC\)](#) and PHRT ETH [Clinical Metabolome Analysis Center \(CMAC\)](#) an essential component of the PHRT multi-omics strategy for Precision Medicine. The three centers are currently digitizing larger cohorts of clinical biospecimen in a coordinated fashion to leverage this multi-omics data together with ETH domain data scientists (incl. SDSC) at the interface to the clinic to support clinical decision-making. The PHRT Swiss Multi-omics Center (SMOC) is generating data for clinical research and building up data analysis pipelines and strategies, which are essential for integrated data analysis. PHRT program applicants are **strongly encouraged to integrate the PHRT Swiss Multi-omics Center** if their project needs fall into this category on a fee-for-service basis. PHRT program applicants are also strongly encouraged to reach out and network with all other ETH-supported technology platforms. The ETH domain institutions provide and support an excellent ecosystem of technology platforms, and PHRT would like to encourage applicants to leverage these unique ETH domain assets.

Information about the ETH PHRT technology platforms can be found [here](#).

The second-generation ETH PHRT technology platforms (imaging, computational analysis) are set up.

- II. **Technology Translation Projects** intend to advance innovative technologies pioneered in the ETH Domain for clinical application. These proposals can include technologies that complement existing first-generation platforms in an essential way.
- III. **Personalized Medicine / Personalized Health Research Projects** directly relevant to the clinical and/or patient. These projects can be carried out in collaboration with and jointly funded by complementary programs such as SPHN or in partnership with clinical centers.
- IV. An **educational program** on the interdisciplinary doctoral and postdoc level to train the next generation of scientists in personalized health research.

- V. Clinical cohort studies use the Technology Platforms / Centers / Hubs to apply a multi-omics approach to clinical questions, so-called **Pioneer Projects** (for multi “-omics” data collection and interpretation of clinical sample cohorts).

**Note#1:** PHRT has set up three **technology platforms centers / hubs** (see above) that **are strongly recommended to be** used on a fee-for-service basis for PHRT and SPHN projects:

- (a) Clinical Genome sequencing and Analysis Center (CGAC) in Geneva (by J. Fellay)
- (b) Clinical Proteotype Analysis Center (CPAC) in Zurich (by P. Pedrioli, S. Götze)
- (c) Clinical Metabolome Analysis Center (CMAC) in Zurich (by N. Zamboni)

Each center has elaborated a particular mode of operation. Respective information and progress are given on the [PHRT website](#).

**Note#2:** Adherence to the currently valid version of the [Ethical Framework for Responsible Data Processing](#) is mandatory to apply for PHRT funding. Applicants should consult the PHRT webpage for information about the newest version of the Ethical Framework for Responsible Data Processing.

**Note#3:** Typically, PH/PM research projects require approvals (e.g., ethics) and/or agreements (e.g., Data Transfer and Use Agreement). As for rules by PHRT, all necessary documents must be **available three months after project start**. In the case of missing permissions/documents, the project will be put on hold. An overview and templates for various agreements are found on the [SPHN-DCC website](#).

**Note#4:** An important part of the project proposal will be to describe how project results can be **applied to patients** to better understand the disease, better diagnosis, and/or better treatment from a personalized health/medicine point of view. In case the project will not translate straight away **into clinic**, a clear path and timeline towards such a development must be described.

**Note#5:** Generated data must follow the [FAIR principle](#), in particular, it must be re-usable and accessible. It is suggested to assess the possibility of working with already existing data.

### 1.3 Who can apply for PHRT Projects?

All scientists with a doctoral degree (postdocs only for iPostdoc Projects) employed by institutions of the ETH Domain, i.e., faculty members and senior researchers employed at Empa, EPFL, ETHZ, PSI, Eawag, or WSL, are eligible for PHRT funding. If the proposal is approved, he/she will act as principal investigator (PI) and coordinate the consortium (if there is one).

Collaboration with “non-ETH Domain” scientists is highly recommended and desired, especially with clinical groups from universities, university hospitals, and clinical institutions. However, the ETH Board has ruled that PHRT funds can only be received from researchers of the ETH Domain and must be spent within ETH Domain institutions with a few well-defined exceptions. A contract must be set up to regulate the service for each exception. Therefore, such

proposals must submit a total cost budget indicating which parts (research groups and activities) are funded from various funding sources (PHRT - ETH Domain, SPHN - universities, university hospitals, clinical institutions, own contributions, SNSF, etc.). In particular cases, e.g., access to -omics or clinical data can be organized **as a clinical service** via the cost category “consumables” in the PHRT budget. Note: clinical services should be maximal 20% of the total PHRT budget. If they exceed 20%, a sound justification must be given.

Proposals that bridge PHRT and SDSC or PHRT and SPHN, forming consortia with scientists, engineers and clinicians, are particularly welcome. Visit also the [SPHN website](#) for more information.

## 1.4 Conflict of interest policy

PHRT is committed to a fair and transparent review process for submitted proposals. This includes transparent management of conflicts of interest. If a member of a PHRT committee submits a proposal, he/she will be denied access to the evaluation documents and will be obliged to withdraw from any discussions or decision-making concerning his/her proposal. In addition, a member of a PHRT committee must withdraw if he/she has a potential conflict of interest with respect to a proposal under evaluation by the relevant evaluation body.

Members of the PHRT committee must declare any reasons for withdrawal, such as:

- being co-applicant on the proposal or being referred to as a partner in a cooperation project;
- being a close family or in a personal relationship with the applicant (relatives, marriage, partnership, close friendship);
- being professionally dependent on or in competition with the applicant (or have been until recently or will be in the foreseeable future);
- having published jointly with the applicant in the last five years and whereby the publication was a result of close cooperation;
- other criteria that put their impartiality in doubt.

All decisions with respect to proposal evaluation and funding will be documented in writing; conflicts of interest and absence from the discussion will be documented in the meeting minutes.

## 1.5 Additional information

Additional information about the ETH Domain Strategic Focus Area “Personalized Health and Related Technologies” can be found at [www.sfa-phrt.ch](http://www.sfa-phrt.ch). Please contact the PHRT Office: [PHRT-Office@ethz.ch](mailto:PHRT-Office@ethz.ch); 044 632 74 23.

## 2 Scope of 7<sup>th</sup> PHRT call for proposals

In the seventh call, PHRT will support

- Doctoral student (iDoc Projects) and postdoc (iPostdoc Projects) projects are bridging the two areas of science/engineering and medicine.
- Technology Translation Projects (TTP) aim to bring technologies developed in the institutions of the ETH Domain **into direct clinical utility**.
- Personalized Health/Medicine Research Projects allow to study a human disease as a complex system, generating and/or using various types of data. Projects may also focus on a systems approaches to medical and/or clinical questions.
- Imaging Projects contributing to and becoming part of the PHRT Imagine Hub.

A total of up to almost **CHF 20 million** is made available for the 7<sup>th</sup> call.

The **submission deadline** for the proposals of this fifth call is **April 17, 2022**.

## 3 Selection procedure for PHRT proposals

The selection of the proposals will be preceded by a formal check by the PHRT office. Proposals that fail to comply with the formal requirements will not be admitted to the next stage of the selection procedure and will be rejected if the defect cannot be easily remedied. The following formal requirements must be met:

- Compliance with the electronic submission deadline;
- Use of the official forms (PHRT) and completeness of the proposal, written in English;
- Eligibility of the applicant.

The interdisciplinary PHRT review panel is composed of up to 15 experts, of which half are from ETH Domain institutions, and the other are scientists and experts from other institutions, primarily international.

## 4 Annual scientific/technical and financial reporting

The annual scientific progress and financial reports of each PHRT project are to be submitted to the PHRT Office once a year. The reports will be consolidated and reviewed. If the progress or achievements differ markedly from the planning, the EC may invite the PI to discuss new milestones or close the project.

Financial and scientific reporting is to be provided according to defined directives. PHRT projects can use funding until no longer than December 2025.

## 5 Abbreviations

AM	Advanced Manufacturing (SFA of the ETH Domain)
DCC	Data Coordination Center of SPHN
EC	Executive Committee of PHRT
ETH Domain	EAWAG, Empa, ETH Zurich EPF Lausanne, PSI, WSL
iDoc	Interdisciplinary doctoral student Project
iPostdoc	Interdisciplinary postdoc Project (7 <sup>th</sup> call for proposal)
PI	Principal Investigator
PH	Personalized health
PHRT	Personalized Health and Related Technologies
PM	Personalized medicine
SC	Strategic Committee of PHRT
SERI	State Secretariat of Education, Research and Innovation (German: SBFI)
SDSC	Swiss Data Science Center (SFA of the ETH Domain)
SFA	Strategic Focus Area of the ETH Domain
SNSF	Swiss National Science Foundation
SPHN	Swiss Personalized Health Network
TPdF	Transition Postdoc Fellowship (1 <sup>st</sup> to 5 <sup>th</sup> call for proposal)