The Swiss Personalized Health Network (SPHN) Initiative

Prof. Dr. med. Peter J Meier-Abt
Chairmen of the SPHN Steering Board
International initiatives
Vision “Personalized Medicine/Health”

The Scientific Basis

Genotype

- Patients
- Healthy Persons

Environment, Life Style

Epigenome

Molecular Networks

Phenotype

- Patients
- Healthy Persons
“Personalized medicine is a strategy to prevent, diagnose, and treat diseases so as to achieve an optimal result for the individual.”

*Meyer UA, Clin Pharmacol Ther 91, 373, 2012*
Patient involvement. Management of well being.

Quantified self / life logging. Longitudinal real time data.

By 2022 about 10 millions of human genomes will be sequenced.

More than 80% of these in a health care setting.
Swiss Personalized Health Network (SPHN)
The main goal of the SPHN initiative is to bring Switzerland at the forefront of personalized health research by establishing nationwide interoperability of biomedical information. Data sharing must be the guiding principle.
Swiss Personalized Health Network (SPHN)
Swiss Personalized Health Network (SPHN)

Data Interoperability and Exchangeability on a National Level
Swiss Personalized Health Network (SPHN): Challenges

Ethical, Legal and Social Implications

Information security and data protection

Semantic interoperability
Personalized Health in Switzerland

Coordinated with:

50 Mio CHF

68 Mio CHF (2017-2020)
SPHN – A decentralized approach

SPHN establishes a dynamic network of distributed interoperable and sharable resources (data, platforms, workflows, competences) with national coordination.
SPHN funds three types of projects

To develop and implement the required infrastructure, SPHN funds the following project types:

<table>
<thead>
<tr>
<th>Project type</th>
<th>Description</th>
<th>Funding scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure implementation projects</td>
<td>Projects that are devoted to build a progressive shareable data system enabling nationwide interoperability of molecular and clinical patient data.</td>
<td>Collaboration agreements</td>
</tr>
<tr>
<td>Infrastructure development projects</td>
<td>Projects that thrive to develop and test new technologies, methods and infrastructures for personalized health related research in connection with infrastructure implementation.</td>
<td>Call for proposals*</td>
</tr>
<tr>
<td>Driver projects</td>
<td>These projects are based in a concrete research field (e.g. cancer research/oncology) and will push the development of clinical data management systems in all University Hospitals by testing data interoperability &amp; data sharing principles within the whole network.</td>
<td>Call for proposals*</td>
</tr>
</tbody>
</table>

*Coordinated call for proposals with ETH- Domain SFA-PHRT: Joint proposals between ETH researchers and non ETH researchers can be submitted for both type of projects.
Swiss Personalized Health Network erhält ein starkes Signal aus den Universitätsspitälern

(English version below)

Das Swiss Personalized Health Network (SPHN) ist eine nationale Initiative unter Federführung der SAMW. Es trägt zur Entwicklung, Implementierung und Validierung einer koordinierten Dateninfrastruktur bei, um gesundheitsrelevante Daten schweizweit für die Forschung nutzbar zu machen. Ende 2017 konnten wichtige Leistungsvereinbarungen mit allen fünf Universitätsspitälern abgeschlossen werden.


Die Liste der Meilensteine und mehr Informationen zu den Rahmenbedingungen, Zielen und Instrumenten des SPHN finden Sie online: www.sphn.ch/de
Infrastructure Implementation Projects

Data Management Infrastructure at Hospitals

Secure Research Environment (BioMedIT)

Universities
# 2017 Call Results: Infrastructure Development Projects

<table>
<thead>
<tr>
<th>Project Title</th>
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</thead>
<tbody>
<tr>
<td><strong>Management and Policy Infrastructure:</strong></td>
</tr>
<tr>
<td><strong>Platforms:</strong></td>
</tr>
<tr>
<td>1. Harmonising the collection of health related data and biospecimens in paediatric hospitals throughout Switzerland – Prof. Claudia Kuehni (UniBE). CHF 400’000.</td>
</tr>
<tr>
<td><strong>Oncology:</strong></td>
</tr>
<tr>
<td>1. Swiss Variant Interpretation Platform for Oncology (SVIP-O) – Dr. Daniel Stekhoven (ETHZ). CHF 400’000.</td>
</tr>
<tr>
<td>2. NLPforTC – Dr. Thomas Fabbro (USB). CHF 400’000.</td>
</tr>
</tbody>
</table>
# 2017 Call Results: Driver Projects

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frailty:</strong> Swiss Frailty Network and Repository (SFNR) – Prof. Heike Bischoff-Ferrari (USZ). CHF 1.785 Mio.</td>
<td></td>
</tr>
<tr>
<td><strong>Pathology:</strong> Swiss Molecular Pathology Breakthrough Platform (SOCIBP) – Prof. Mark Rubin (Inselspital). CHF 2.3 Mio. *</td>
<td></td>
</tr>
<tr>
<td><strong>Oncology:</strong> Swiss Personalized Oncology Driver (SPOD) – Prof. Olivier Michielin (CHUV). CHF 2.3 Mio &amp; Multidisciplinary Multicentre Molecular and Cellular Cancer Consortium – Prof. Mohamed Bentires-Alj (USB). CHF 1.275 Mio. *</td>
<td>Projects were merged.</td>
</tr>
<tr>
<td><strong>Inflammation:</strong> Identification of biomarkers and therapeutic targets in inflammatory disease immunotherapy by high-dimensional single cell analysis and cluster proteomics – Prof. Manfred Claassen (ETHZ). CHF 1.445 Mio. *</td>
<td></td>
</tr>
<tr>
<td><strong>Sepsis:</strong> Personalized Swiss Sepsis Study (PSSS) – PD Adrian Egli (USB). CHF 2.3 Mio. *</td>
<td></td>
</tr>
</tbody>
</table>

*Joint funding through SPHN & PHRT. Numbers refer to SPHN contributions only.*
Call for proposals 2018

The second and last call for proposals during the period 2017-2020 was launched mid-March.

- The call is coordinated with PHRT for both “driver” and “infrastructure development” projects.

- Submissions in the following focus areas are encouraged:
  - Imaging and radiology interoperability (infra. development projects)
  - Public health, healthy citizens
  - Nationwide interoperability of cohorts (infra. development projects)

- Call budget: up to CHF 9.3 mio

- Timeline:
  - Call publication: 15 March 2018
  - Application deadline: 30 June 2018
  - IAB meeting: 29 September 2018
Call for proposals 2018 (2)

Proposals received on 30 June 2018:

<table>
<thead>
<tr>
<th>Total Applications received</th>
<th>Joint SPHN-PHRT proposal</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requested</td>
<td>Available</td>
</tr>
<tr>
<td>Infrastructure development projects</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Driver projects</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>6</td>
</tr>
</tbody>
</table>

Next steps:
- Proposals will be evaluated by the International Advisory Board (IAB)
- Joint PHRT-SPHN projects will be evaluated independently by the IAB and PHRT review panel.
Call for proposals 2018 (3)

Proposals received in the 3 focus areas:

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Interoperability of imaging and radiology</th>
<th>Public health, healthy citizens</th>
<th>Nationwide interoperability of cohorts</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure development projects</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Driver projects</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
<td><strong>3</strong></td>
<td><strong>5</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

Infrastructure development project proposals (2018)

- Interoperability of imaging and radiology
- Public health, healthy citizens
- Nationwide interoperability of cohorts
- General

Driver project proposals (2018)

- Interoperability of imaging and radiology
- Public health, healthy citizens
- Nationwide interoperability of cohorts
- General
National Coordination of Standards

The SPHN initiative requires central coordination of the geographically distributed stakeholders such as University Hospitals, research institutions, data protection specialists and centres of competence for scientific computing.
SPHN Data Coordination Center

The **SPHN Data Coordination Centre (DCC)**, managed by the **SIB Swiss Institute of Bioinformatics**, is headquartered in Basel.

**It is the DCC’s task** to work towards establishing secure technical and semantic interoperability of health-related data for personalized health research in Switzerland, coordinating the research projects.

**3 strategic areas:**

<table>
<thead>
<tr>
<th>Technical Interoperability</th>
<th>National Data Standards</th>
<th>Information Repository &amp; Training</th>
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</thead>
<tbody>
<tr>
<td>operating central IT services and coordinating processes for secure data transfer between BioMedIT nodes, Hospitals, Clinical Data Warehouses, Research Platforms.</td>
<td>leading the process for definition and implementation of national data standards by coordinating expert working groups.</td>
<td>managing systems for exchange within the Swiss Personalized Health Network and organizing events for training and knowledge exchange.</td>
</tr>
</tbody>
</table>

Website: dcc.sib.swiss
4TH ESPT SUMMER SCHOOL
September 24-27, 2018
Geneva, Switzerland

PRECISION MEDICINE AND PERSONALISED HEALTH
Supported by SPHN

Chair: Prof Marc Ansari (ESPT); co-chair: Prof Peter Meier-Abt (SPHN)
ESPT Educational Division: Prof Janja Marc (chair), Prof Vangelis Manolopoulos (co-chair)
Prof Ron van Schaik (ESPT President)

Early bird registration: Until June 30, 2018
Deadline registration: September 1, 2018

NOTE: Please be aware that the number of participants is limited to 80! Registration will be on a “first come, first serve” basis!

www.esptsummerschool.eu

Hosted by the Swiss Academy of Medical Sciences (SAMS)

28 September 2018

Campus Biotech

Geneva, Switzerland
Swiss Personalized Health Network

The Swiss Personalized Health Network (SPHN) is a national initiative designed to promote the development of personalized medicine and personalized health in Switzerland.

SPHN will lay the foundations that are needed to facilitate research projects in this area such as a system for a nationwide exchange of health-related data.

The ultimate goal is to promote health and well-being, to prevent, diagnose and treat unfavourable health conditions more precisely, thus reducing the risk of developing such conditions and permitting more effective treatments of disease states with fewer adverse effects.

4th ESPT Summer School supported by SPHN

Job opening
The position of "Director, Data Coordination Centre and Personalised Health Informatics Group" is open for application.

Further information on LinkedIn and on Refline.

Call for proposals 2018
The second call for proposals was open from mid-March until 30 June 2018. Results will be communicated from mid-November 2018.

New publications
The following documents were published in Spring/Summer 2018:

- Version 2 of the Ethical Framework for Responsible Data Processing in Personalized Health Research. This version is endorsed by the Swiss Biobanking Platform and PHRT. Applicants should note that version 2 is the valid version for the Call for proposals 2018.
Event Details

The GA4GH 6th Plenary Meeting will be held at the Congress Center Basel in Basel, Switzerland and will present the first set of deliverables developed under GA4GH Connect — our 5-year strategic plan to enable real-world genomic data sharing by 2022.

We are grateful for the support of our local meeting sponsors, the SIB Swiss Institute of Bioinformatics and ELIXIR, who will co-host the meeting.

To stay up to date on GA4GH 6th Plenary Meeting announcements and other news, subscribe to our mailing list.