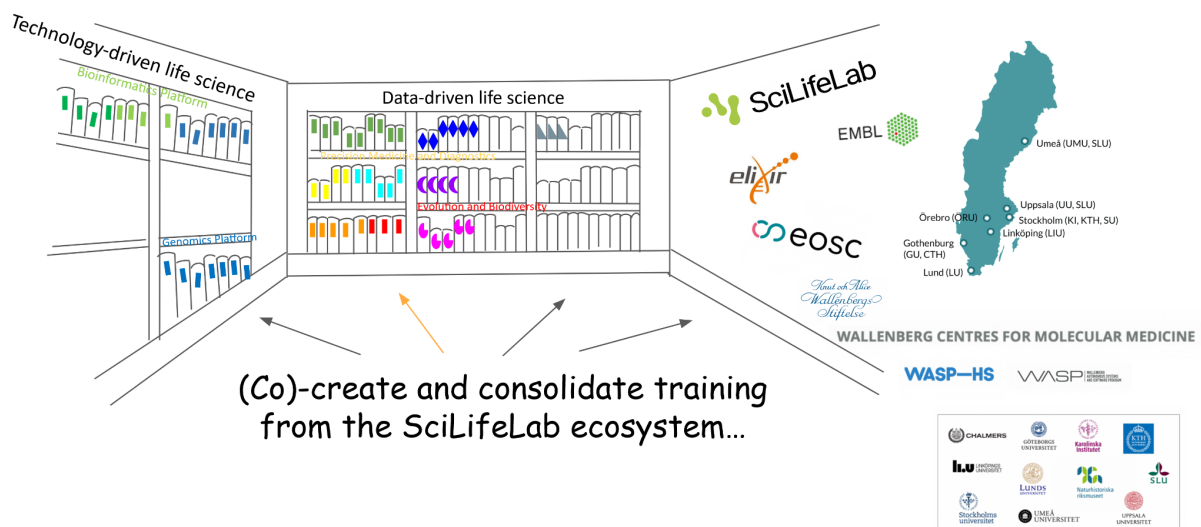


SciLifeLab Training Hub Roadmap 2023 - 2030



*Becoming the national go-to-place for
technology- and data-driven lifelong
learning*

Executive summary

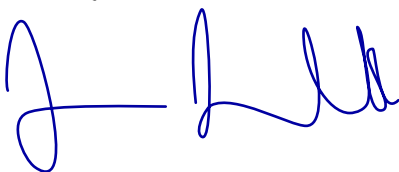
SciLifeLab (Science for Life Laboratory) is a governmental, national Research Infrastructure for life science with special focus on the technology- and data-driven life science disciplines. Across the SciLifeLab ecosystem, distributed across 6 national sites, 10 platforms and more than 40 units and Data Centre, SciLifeLab provides a treasure of knowledge, skills and expertise. In 2023, SciLifeLab launched its Training Hub, which is dedicated to consolidating lifelong learning across the Research Infrastructure ecosystem. In this roadmap, stretching over the next decade, a 10 year period between 2023 to 2033, we describe how the Training Hub will leverage SciLifeLab knowledge, skills and expertise and transform this into openly available and FAIR (Findable, Applicable, Interoperable, Re-usable) training and lifelong learning for the benefit of Swedish life science community and beyond. We are carving out a Work plan stretching the first 5 years of the Road-map, between 2023 to 2028 where we set out to initiate this ambitious work. The strategy as well as the more detailed Work Programme are both in alignment with the SciLifeLab Roadmap 2020-2030 as well as the KAW/SciLifeLab DDLS Programme Strategy, respectively, and focuses on what the Training Hub can achieve together with all SciLifeLab's different stakeholders, maximising the capacity of the life science ecosystem as a whole.

The role of SciLifeLab Training Hub is interlinked with the increasing importance of lifelong learning across the STEMM (Science, Technology, Engineering, Mathematics, Medicine) science topics in general', something the Swedish government, SciLifeLab and the Higher Educational Institutions across Sweden have lifted as important. By consolidating and coordinating the training efforts across the SciLifeLab ecosystem, the life science community will get easy access to the SciLifeLab infrastructure knowledge, skills and expertise. A Training Hub will support and promote timely, relevant, and openly available training and lifelong learning in SciLifeLab specific topics i.e mirroring the competence and knowledge across the Infrastructure and its associated projects.

I hope you will, as we do, see the value and benefit of the activities of SciLifeLab Training Hub, both for the development and sustainability of the Research Infrastructure as well as to upskill and capacity build the life science research community in topics found across the SciLifeLab ecosystem.

With that I like to say welcome to the future of Research Infrastructure training and lifelong learning.

Best regards,



Jessica M. Lindvall, Associate Professor
Head of Training, SciLifeLab Training Hub

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Vision and Mission statement

The vision of SciLifeLab Training Hub is to Become the national go-to-place for technology- and data-driven lifelong learning. We will reach this goal by Consolidating, coordinating and supporting the co-creative training efforts across the SciLifeLab ecosystem, thus enabling world-class research by providing the life science community with easy access to the SciLifeLab knowledge and skills.

Strategic Pillars

The SciLifeLab Training Hub is grounded in three strategic pillars (Figure 1).

Support: technical infrastructure and organisation

By providing a sustainable infrastructure encompassing both a technical platform and a people organisational structure, the SciLifeLab community will be supported to co-create, deliver and consume openly available lifelong learning enabling research and technology development.

Standards: quality assurance

Asserting all SciLifeLab offered training is relevant, of highest quality, and follows the principles of OPEN and FAIR. The quality and assurance of the training is achieved through providing policies, guidelines and best practices in training and learning.

Community: trainers and learners

Training Hub will establish a culture where training is part of all SciLifeLab dimensions. Training Hub will also provide learners from the life science community with support throughout their lifelong learning experience.

Core values

The core values permeate the three pillars and any future Work Programme of the Training Hub. We believe that the chosen Core values are of central importance and the foundational guiding principles that defines the identity of SciLifeLab Training Hub and guides the choices, ways-of-working as well as the tasks we engage in.

Training Hub strives to;

Collaborate

Provide a co-creative and engaging environment for trainers and learners alike

Include

Be an inclusive community where diversity is key

Share

Willingness to provide knowledge and help. We aim to share!

Sustain

Our expertise and knowledge as well as all Training Hub outputs are to be as Open as possible following the FAIR principles

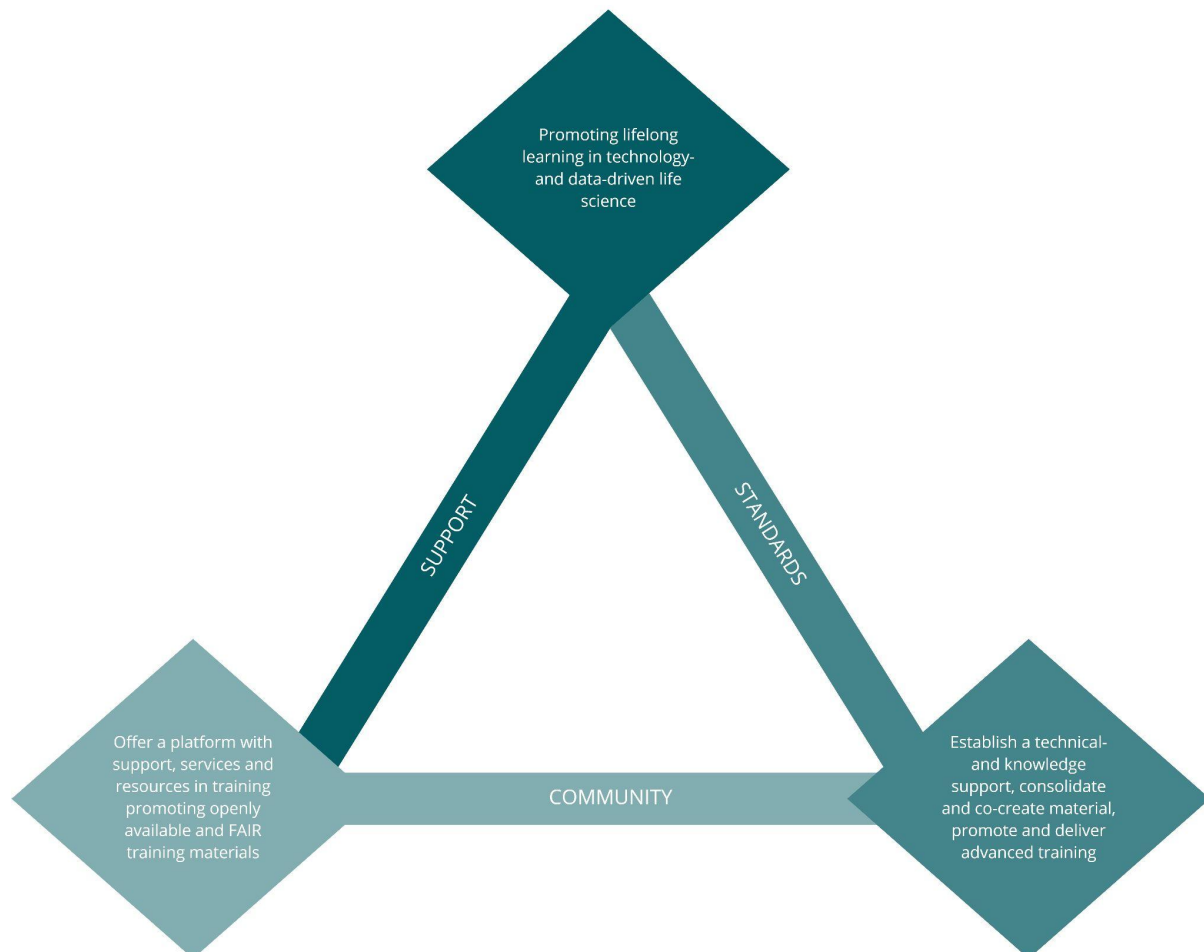


Figure 1. SciLifeLab Training Hub pillars (triangle); Support, Standards, and Community. The diamond shapes surrounding the pillars show; 1) the Purpose of the Training Hub “*promote lifelong learning in technology- and data-driven life science*”, 2) the Process the Training Hub will make use of “*establish a technical- and knowledge support, consolidate and co-create material, promote and deliver advanced training*”, and 3) The outcome and scope for the Training Hub “*to provide a national training platform with support, services and resources promoting openly available and FAIR training materials*”

Training Hub connection to the *internal* SciLifeLab ecosystem

The Training Hub is working closely with the pillars of SciLifeLab (Infrastructure, Research and Data-driven life science). This is the community where the experts across the disciplines of SciLifeLab are found and these are the trainers that carry out the training. Training Hub experts and resources are there to support this training to be delivered. We are capacity building the SciLifeLab ecosystem in training methodology and standards, assuring quality in lifelong learning from the research infrastructure. It is important that the various activities

and groups across the SciLifeLab ecosystem are in understanding that training as a component is one of the key-enablers existing for ensuring research. Therefore, a co-production model is to be developed between the Training Hub and the ecosystem. We envision establishing Training Liaisons i.e. dedicated Training Coordinators or Ambassadeurs, across core parts of the ecosystem of SciLifeLab such as at the 10 Platforms, the 6 SciLifeLab sites and within the SciLifeLab Capabilities and DDLS programme and Research Areas.

Training Hub connection to the external SciLifeLab ecosystem

The SciLifeLab Training Hub will mainly connect to industry and health-care stakeholder groups via the technological platforms and the SciLifeLab Capabilities in addition to via the connections to external and international organisations, groups and research infrastructures.

Industry

SciLifeLab engages with more than 100 company interactions yearly¹. With this, SciLifeLab actively supports the Swedish life science industry by providing access to essential infrastructure and increasing the knowledge transfer between academia and industry in strategic areas. Training Hub will put emphasis on establishing connections to the industry landscape by providing openly accessible training to the industry as well as to establish various links where training can be the means to bridge the academia, research infrastructure and industry.

Health-care

SciLifeLab works strategically to increase collaborations striving for accelerated implementation of novel research technologies and findings of social benefit linked to health and the healthcare system². With the SciLifeLab Capabilities and the established DDLS Programme Research Areas, which assembles the technological platforms together with linked research areas and external stakeholder groups, the Training Hub will collaborate to assess and support the training and capacity building needed.

¹ SciLifeLab Industry engagement: <https://www.scilifelab.se/external-relations/industry/>

² SciLifeLab Healthcare engagement: <https://www.scilifelab.se/external-relations/healthcare/>

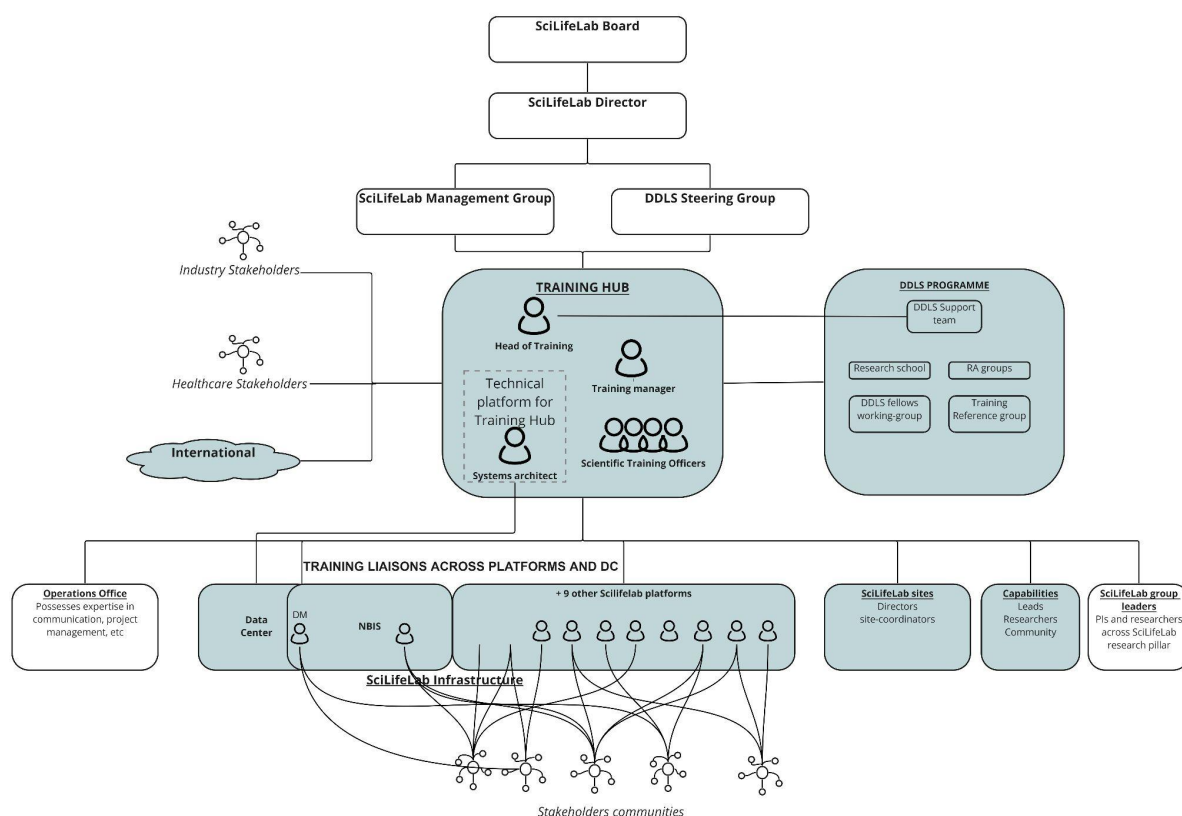
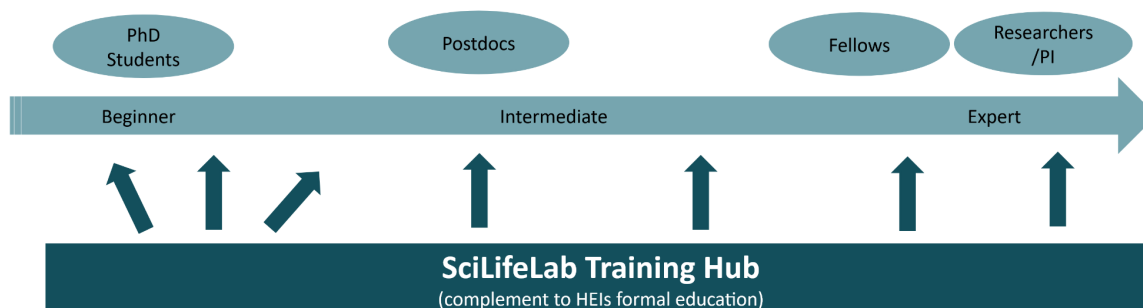


Figure 2. Draft Training Hub stakeholder connections throughout the life science ecosystem. Green represents the Training Hub's primary stakeholder groups across SciLifeLab.

Expected impact - Research Infrastructures as lifelong learning providers

Training from a Research Infrastructure has the mission and the possibility to reach the community, encompassing various professions, different levels and geographical sites (Figure 3).

The expected impact of the Training Hub is a national step-change in terms of quality, quantity and content of available training and lifelong learning in the technology- and data-driven life science disciplines at SciLifeLab. In addition, by ensuring easy access and availability of SciLifeLab knowledge and expertise, such as openly available and flexible formats, training will increase SciLifeLab infrastructure accessibility for the society at large.



Consolidating and co-creating training from...

SciLifeLab Infrastructure training
(including Data Centre)

SciLifeLab affiliated research
group training

Data-driven life science
(DDLS education and
training)

Figure 3. The vision for SciLifeLab is to provide resources, services and support to enable research. By the Training Hub mission to consolidate the knowledge and expertise found across the SciLifeLab and disseminate this knowledge as FAIR training material and activities to the life science community in an accessible and openly available way.

Sharing the knowledge, skills and expertise as lifelong learning from Research Infrastructures should be a trusted complement to the Higher Educational Institutions formal educational programs and curricula. Together we should provide an openly available library of lifelong learning opportunities for the future life science research community (Figure 4).

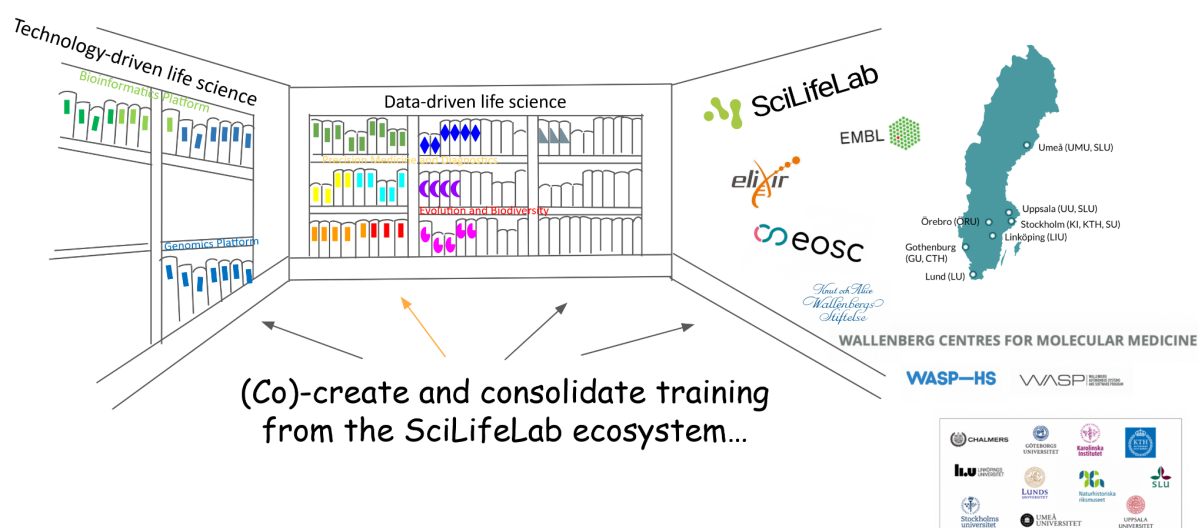


Figure 4. The scope of SciLifeLab Training Hub is to become the national go-to-place for lifelong learning in technology- and data-driven life science. Like a public library, Training Hub's main mission is to ensure the knowledge and expertise found across the SciLifeLab ecosystem to be easily accessible as training materials and activities to anyone in demand to enable their research.

Training Hub Alignment with SciLifeLab 2020-2030 Roadmap and Strategic Goals

SG01: Provide Unique and Impactful Life Science Infrastructure.

Alignment with the Training Hub:

- **Consolidate training** activities and engagement across the SciLifeLab ecosystem to strengthen internal SciLifeLab communities and groups as well as promote knowledge and skills to the outer community.
- **Build and establish a Training Infrastructure** (technical and organisational) to create, promote and deliver impactful training and lifelong learning.

SG02: Develop World Class Research Capabilities and Research Communities.

Alignment with the Training Hub:

- Promoting **training activities co-created with SciLifeLab Capabilities**
- Delivering lifelong learning **to support and enable Sweden-based research and entrepreneurship**
- Training Hub will engage with SciLifeLab ecosystem **to build and create openly available training material**

SG03: Create a National Framework for Data-Driven Life Science.

Alignment with the Training Hub:

- Training Hub will **scale the training and material across the research data cycle**
- Training Hub is committed to **create a Trainer network** in Open Science and FAIR aspects across SciLifeLab scientific disciplines
- Training Hub will **offer training services and resources for trainers and learners alike** (in line with SciLifeLab IT services from Data Centre)

SG04: Attract Scientific Excellence and Provide Advanced Training.

Alignment with the Training Hub:

- Training Hub will take the lead on **assuring provision on advanced training** mirroring the knowledge and expertise at SciLifeLab
- Training Hub is committed to **establish a Trainer-Instructor community** in the knowledge

areas found across the SciLifeLab ecosystem

- Training Hub will offer a **wide training collection across technology- and data-driven life science** thematic areas
- Training Hub will **ensure quality training** where trainers are trained in training and the training material is quality assured

SG05: Promote Collaborations Across Sectors and Borders.

Alignment with the Training Hub:

- **Training activities** across SciLifeLab will be established using a **co-production (co-creative) model where collaboration across the ecosystem** is promoted
- Training Hub will engage and **collaborate with other organisations, national and international**

SG06: Build Translational and Innovation Capabilities.

Alignment with the Training Hub:

- Training Hub will **ensure training activities targeting all of SciLifeLab stakeholder groups**

SciLifeLab Training Hub Work Programme 2023 - 2028

For the five year time period, 2023 to 2028, the Training Hub aims to initiate itself as a recognised core national training platform serving the life science research community with training tools, services and resources for lifelong learning in technology- and data-driven life science. Focus will be on establishing the technical infrastructure, building the people infrastructure and connecting to the wider SciLifeLab ecosystem who is the community of trainers that co-creates and delivers the material and training.

The strategic objectives outlined for the 5 year period aim to capture the full essence of the training platform and its resources, services and support to the community. More details can be found in the full Work Programme 2023-2028 description.

Strategic Objective 1: Establishing a coherent Training Platform infrastructure, by seamlessly integrating technical services and resources

The ultimate goal of this objective is to **build a system of connected Training Platform services**. These services will be the core of **an Openly available Training Platform infrastructure** that could be effectively used by the broad life science community i.e. both within the SciLifeLab ecosystem and externally, moving towards the SciLifeLab Training Hub vision of becoming an established and recognised lifelong learning provider in Sweden for the technology- and data-driven life science community and with this the Training provider for Life Sciences.

Strategic Objective 2: Building knowledge and skills across the SciLifeLab ecosystem with openly available and FAIR training collections

This objective **captures the knowledge base and delivery mechanisms** needed to engage both to the *internal SciLifeLab ecosystem* (such as across Platforms, Sites, DDLS Programme, Industry/Health care and Capabilities), as well as *external SciLifeLab ecosystem* (such as HEIs in Sweden, other RIs and international organisations such as EMBL, EBI, ELIXIR, VIB etc), to create and design and deliver lifelong learning and training as a support to the life science community. The Training Hub services and resources should be actively used and adopted by the community and Training Hub will with these support the co-creation, delivery and dissemination of knowledge from the SciLifeLab ecosystem to the community. The SciLifeLab knowledge base i.e the expertise, skills and knowledge found across SciLifeLab aims to be continuously adapted with the support of the Training Hub to ensure emerging needs in skills and knowledge are consistently captured. This will be achieved through close collaboration with all SciLifeLab entities (Platforms and units, Capabilities, etc).

Strategic Objective 3: Quality and assurance: Promoting standards and best practices for Open Science, Open Education and FAIR

As part of **setting out to become an established and recognised lifelong learning provider in Sweden for the technology- and data-driven life science community**, this

objective captures the need to continue to develop standards and best practices for Open Science and Open Education. The Training Hub, via its connection to the outer ecosystem, already has high engagement in several ongoing initiatives, focus groups and working groups across the European and Swedish scene aiming to capture and establish standards and structures to support trainers and learners. These standards, guidelines and policies will be implemented and adapted by the community as well as new ones will be established when needed.

Strategic Objective 4: Establish a sustainable organisation dedicated to training

This objective is closely linked to the other objectives as it **captures the People infrastructure aspects of training**, both with regards to the Training Hubs core central organisation and operations and its connection to key-enabler groups such as Infrastructure platforms, SciLifeLab sites, Capabilities and SciLifeLab management. One aim is to promote, intensify and support the continued training delivered by the SciLifeLab ecosystem in addition to implementing the standards, tools and resources Training Hub is establishing. This will help to foster the community in Training best practices and strengthen the community building efforts where peer-to-peer learning will happen, creating healthy, safe and open team-science environments in research.