Applying best practices to enhance bioinformatics training in Switzerland

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Education COSI, ISMB 2020

Overview

01 — **SIB Training - What is it?**

02 — **Cycle of best practices**

03 — **Collaborations - community**

What we do in the SIB Training group?

- **Deliver and coordinate training courses**
  In collaboration with SIB members, external partners and trainers

- **Provide teaching**
  In bioinformatics and data science-related fields

- **Provide support in organizing training events with partners**

Training offer

TO WHOM

- PhD

- Postdocs

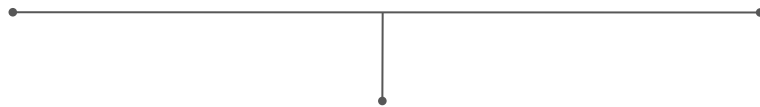- PI

- Staff

- Academia and Industry

WHAT FORMAT

- 1-5 day courses

- Face-to-face or streamed

- Emphasis on practical learning

- Few asynchronous e-learning modules

Training offer – examples of domains taught

Domains

- Statistics

- Programming

- Data visualization, integration & analysis

- Data life cycle management

- Machine learning

- NGS, RNA-seq, proteomics

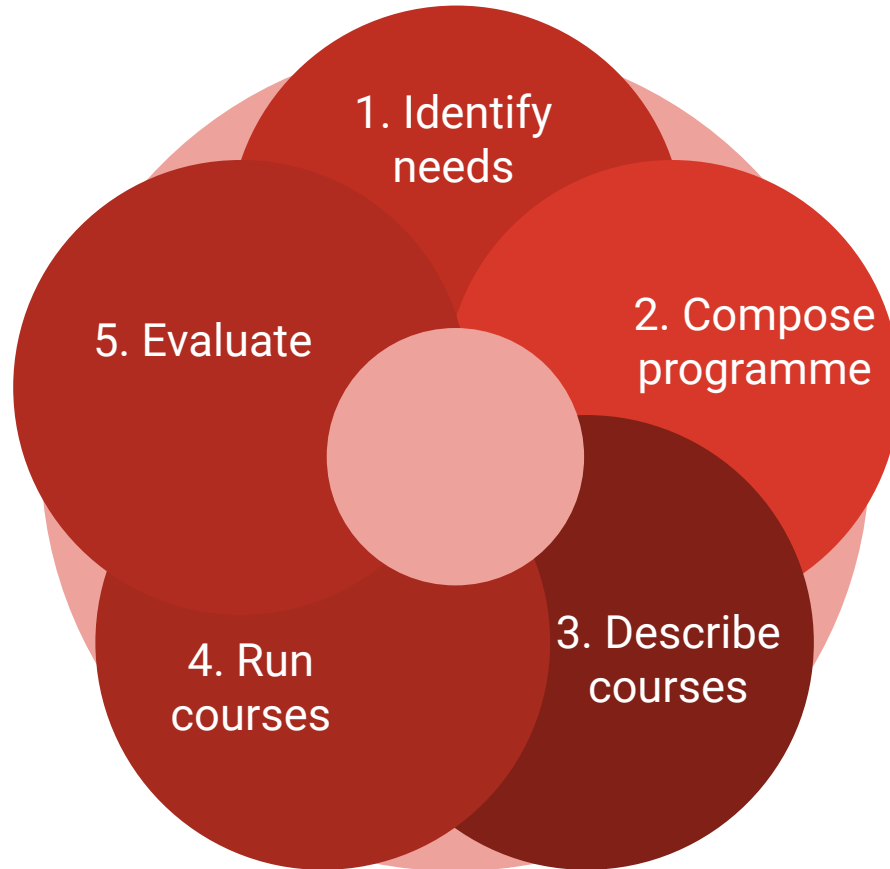# Training in figures - average per year

54

block courses
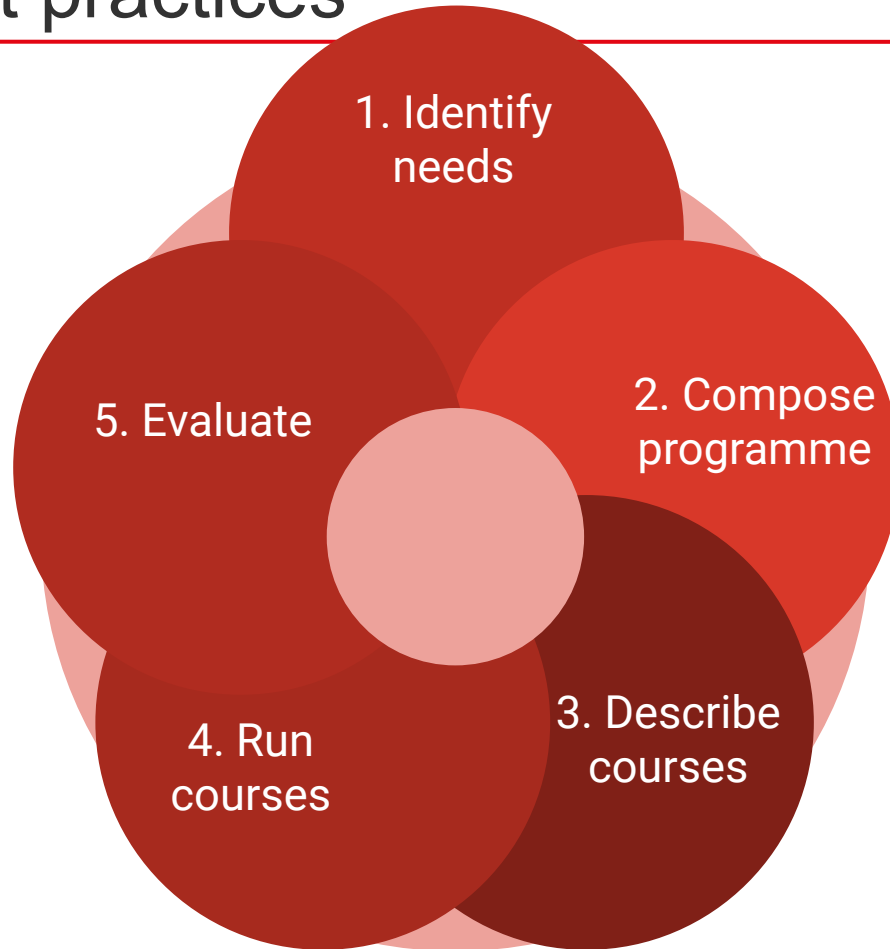
99

**days
of course**

1,277

trainees

22

SIB groups involved

Cycle of best practices
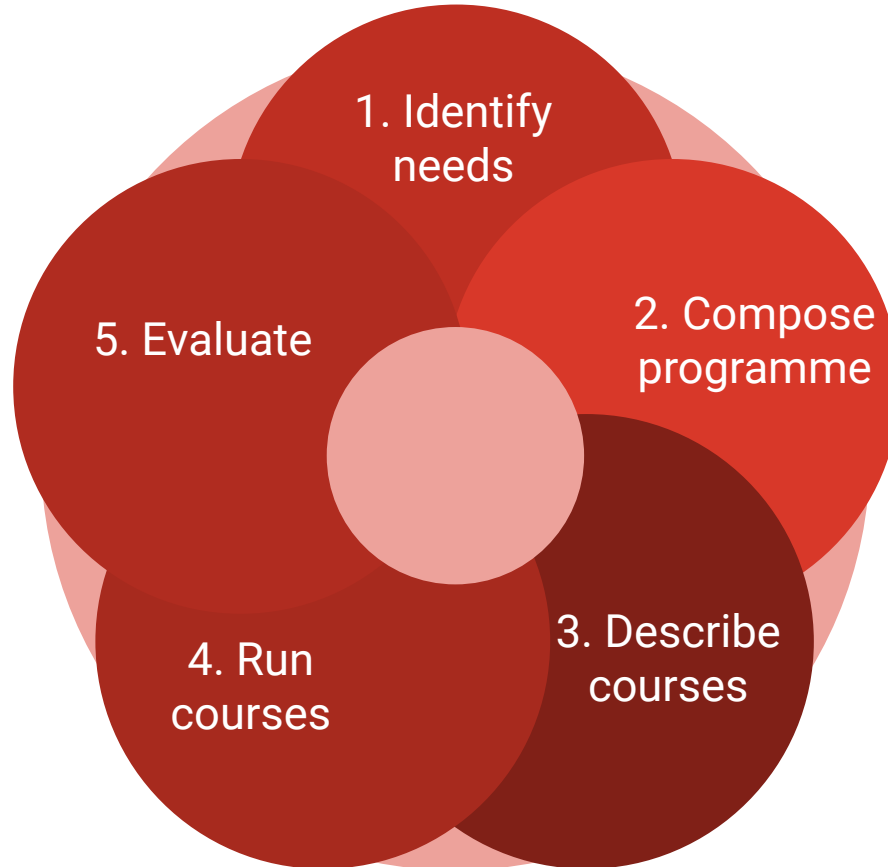
Cycle of best practices
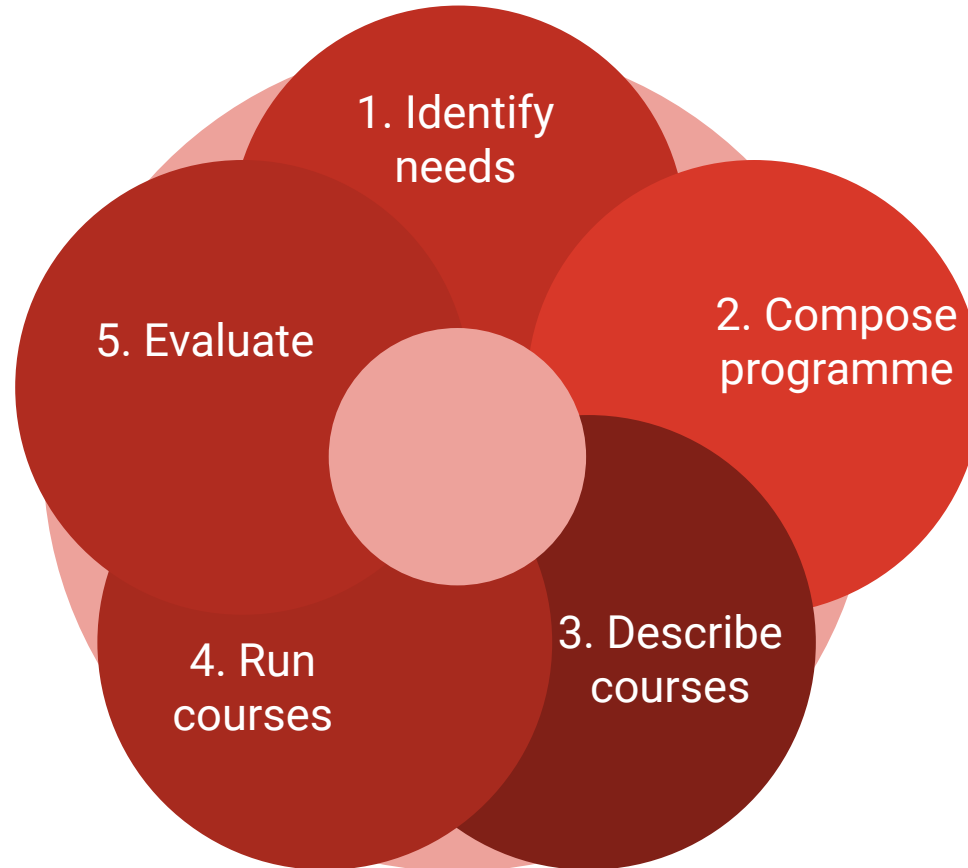
Identify new and continuing needs for courses

Seek feedback from:

- Course participants (post courses)
- Communities of practices - trainers, bioinformatics, open research, reproducible research
- SIB Training Committee
- SIB group leaders & members

Cycle of best practices

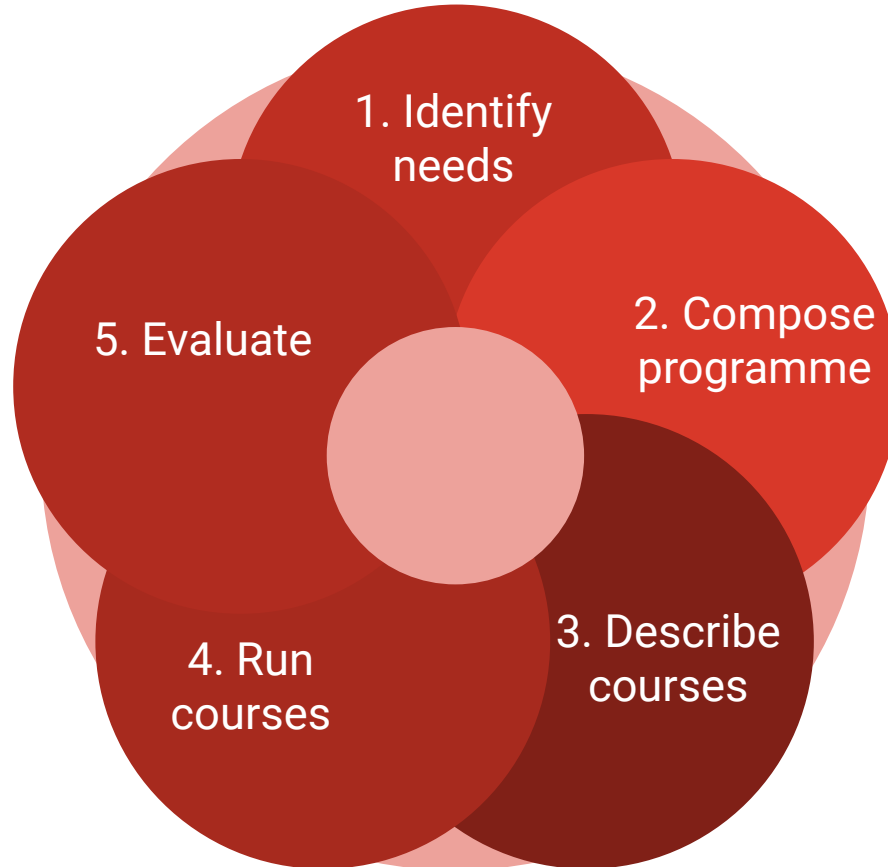# Cycle of best practices

Compose programme with trainers

Who are they?

- Staff from SIB Training group
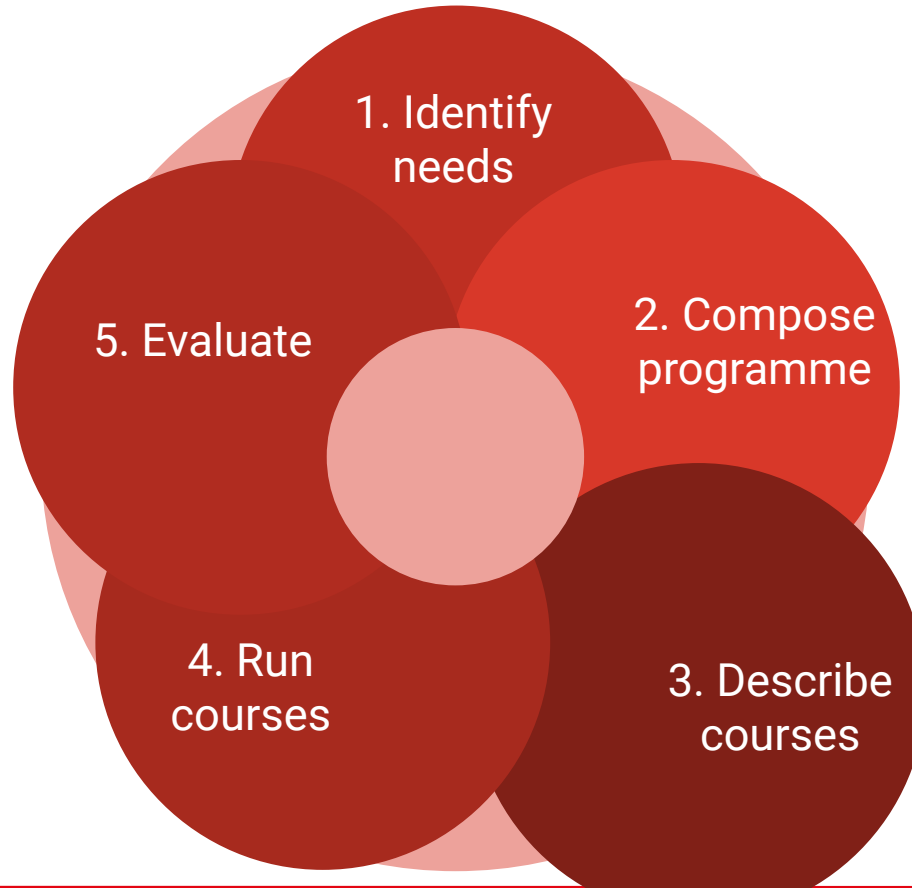- SIB members
- Invited speakers

Focus: needs & SIB resources

Balance: diversity of topics, levels, geographical locations

Cycle of best practices

Cycle of best practices

Course outline following best practices

- Target audience: Knowledge level, prerequisites, background
- Learning outcomes (LO)
  - Bloom's taxonomy
- Select and develop content relevant to LO
- Select learning experiences that will best lead to LO
- Design assessments to measure if LO are achieved

Courses are (F)indable

https://www.sib.swiss/training

https://tess.elixir-europe.org

Cycle of best practices

Cycle of best practices

Training in figures - Quality

93%

Appreciation

- Excellent (5)
- Good (3)
- Poor (1)
- Satisfactory (2)
- Very Good (4)

40%

37.7%

15.1%

6.3%
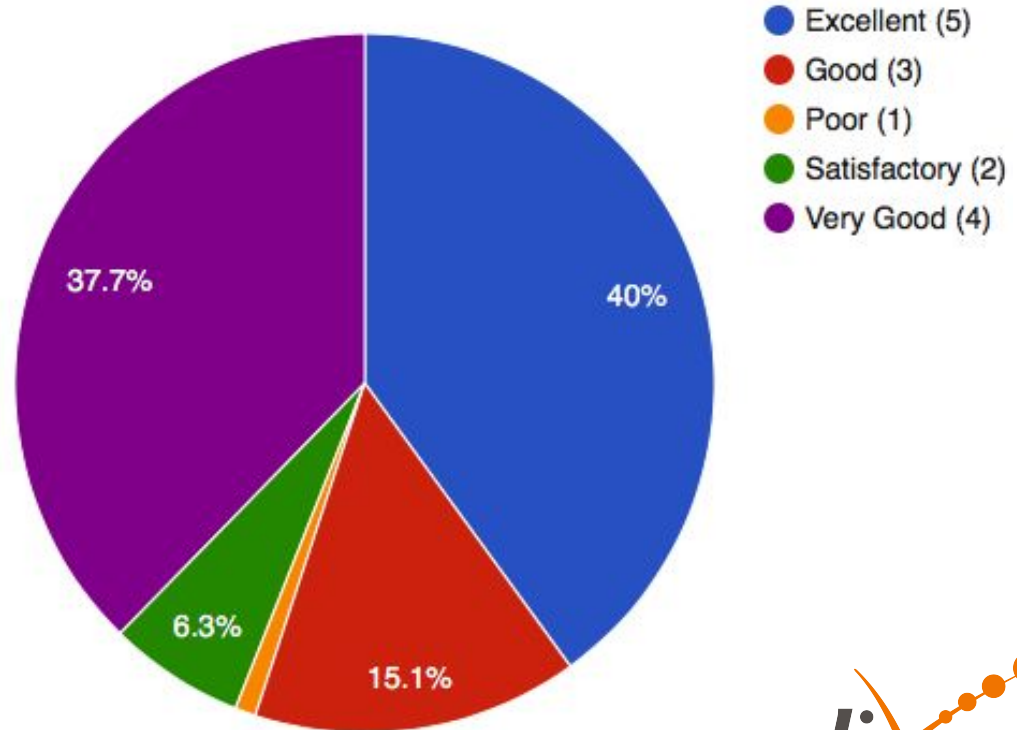
ELIXIR Metrics Database

Training in figures - Quality

89.9%

Recommend

Maybe
No
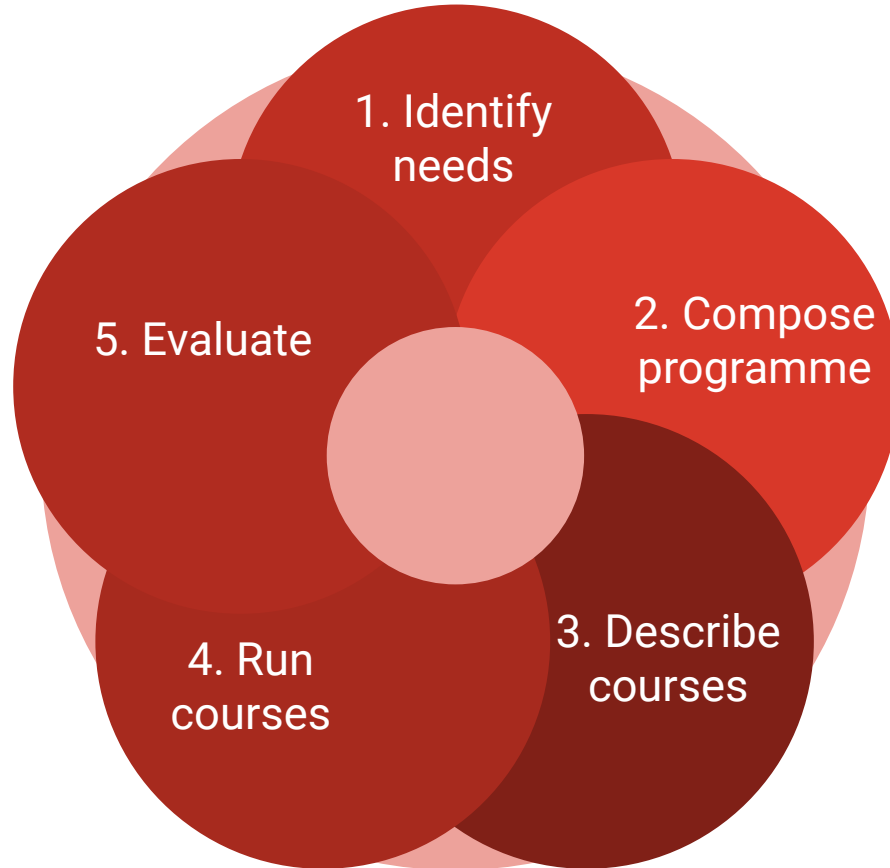Yes

5.8%

89.9%
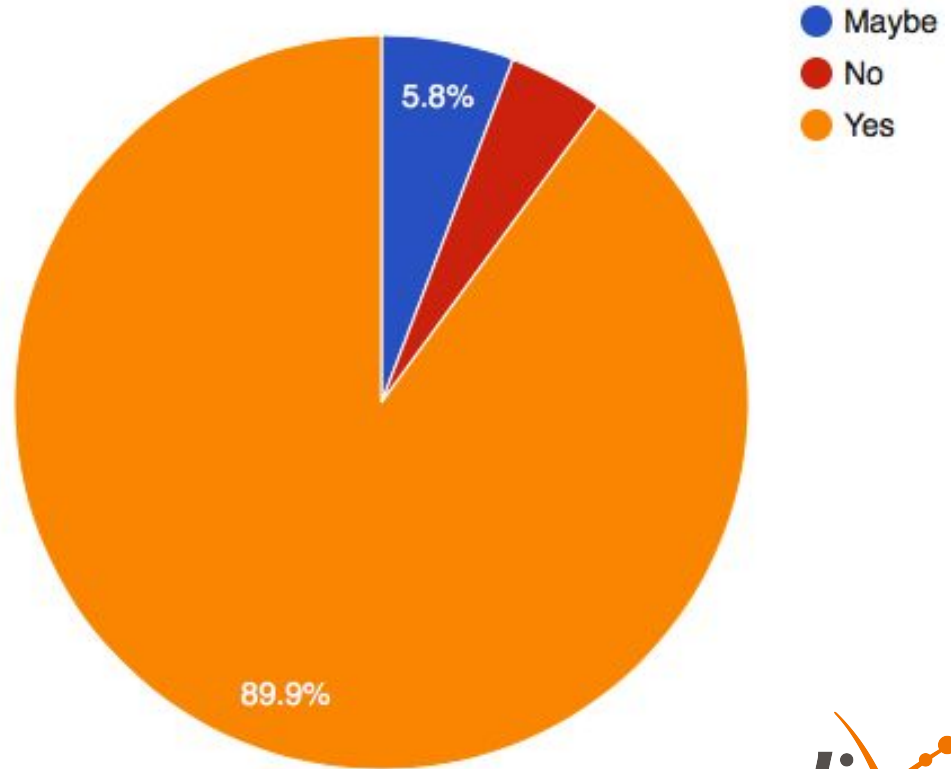
ELIXIR Metrics Database

Training in figures - Impact

Are you now able to use the tool(s)/resource(s) covered in the training?

By using training materials/notes from the training event

Independently

Other

With the help of an expert

50%

32.8%

5.2%

12.1%

ELIXIR Metrics Database

elixir

Training in figures - Impact

How did the training event help with your work?
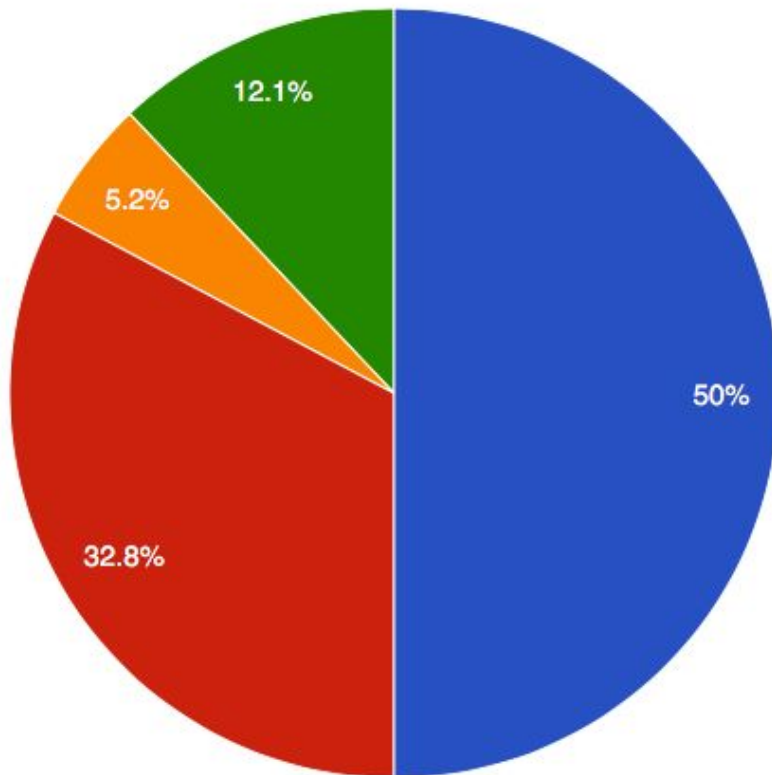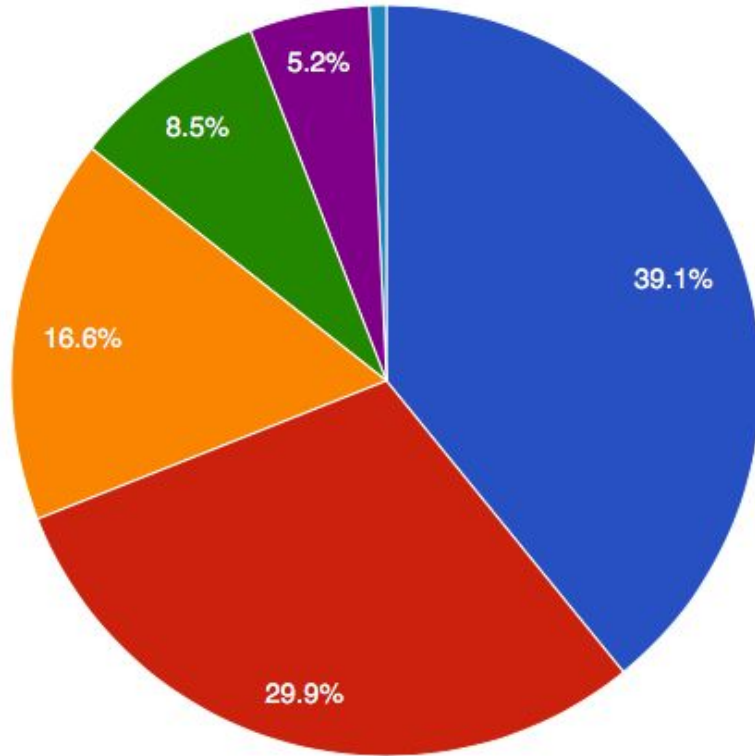

- It improved my ability to handle data
- It enabled me to complete certain tasks more quickly
- It improved communication with the bioinformatician/ statistician analyzing my data
- It has not helped yet but I anticipate a future impact
- It did not help as I do not use the tool(s)/ resource(s) covered in the training event
- Other

39.1%

29.9%

16.6%

8.5%

5.2%

ELIXIR Metrics Database

elixir

Collaborations - dialogue

ELIXIR

GOBLET

ISCB

SIB and Swiss community

ELIXIR and GOBLET Train the Trainer

ELIXIR Train the Trainer courses aim to:
- give new trainers **tools and tips** for providing an **enriching learning experience to trainees**, irrespective of topic,
- include **best-practice guidance on course and training material development.**

Ongoing effort with ELIXIR and GOBLET to reshape this material into guides - make it usable for training online and self learning.

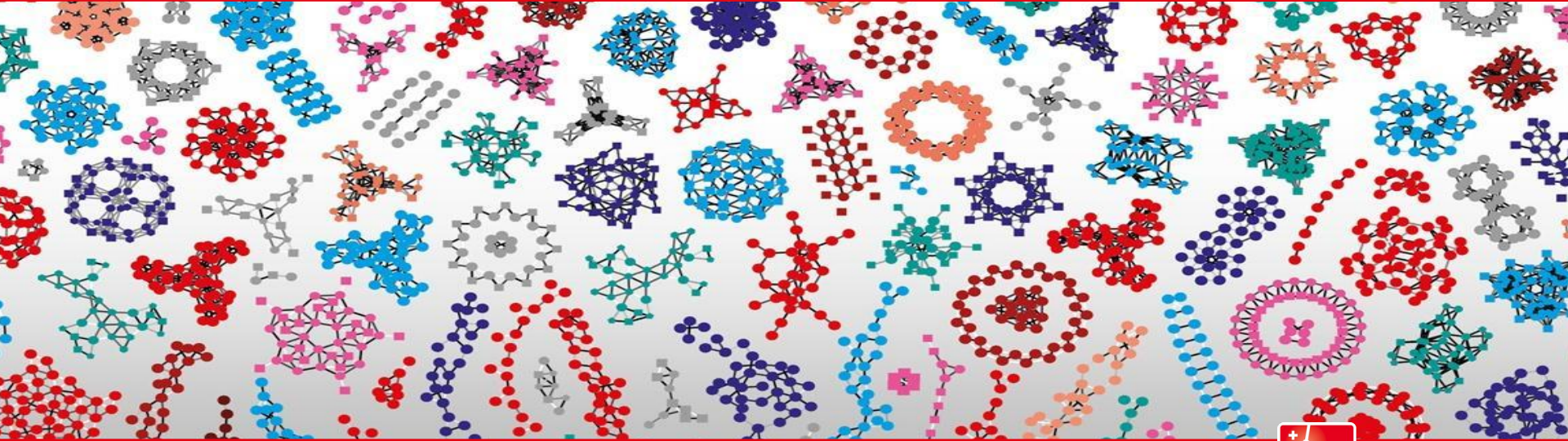https://github.com/TrainTheTrainer/ELIXIR-EXCELERATE-TtT

Take home messages

Achievements through the integration and implementation of these best practices:

- Increase course quality and satisfaction
- Broaden the training scope (levels and topics)
- Broaden the training scale (more courses, more participants)
- Become a bioinformatics training reference in Switzerland

Acknowledgments

- **SIB Training group:** Wandrille Duchemin, Isabelle Dupanloup, Grégoire Rossier, Margaux Roulet, Frédéric Schütz, Monique Zahn, Patricia M. Palagi

- **SIB Training Committee:** Marc Robinson-Rechavi (Chairman), Ron Appel, Rémy Bruggmann, Mauro Delorenzi, Christine Durinx, Pierre Farmer, Christoph Handschin, Florian Steiner, Mark Robinson, Mark Ibberson and Thierry Sengstag

- **Our partners @ ELIXIR, GOBLET, ISCB and SIB colleagues**

Thank you

https://www.sib.swiss/training