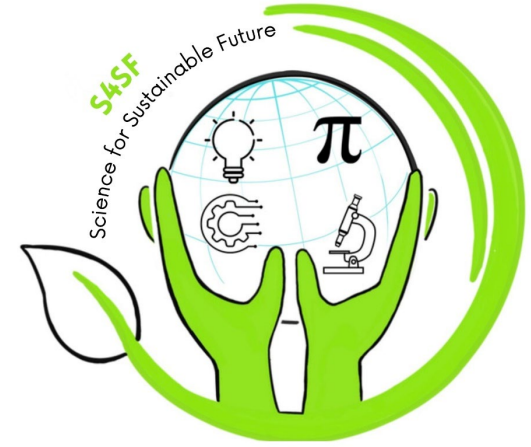




Youth@STEM4SF



Youth at STEM for Sustainable Future

Barbora Bruant Gulejova

STEM ambassador, UNIBE / ATLAS experiment at CERN

S4SF president

barbora.gulejova@cern.ch

Problem? “SDG18”

Lack of interest from youth in STEM studies

- especially in physics and engineering
- especially from girls

Contra - productive trend

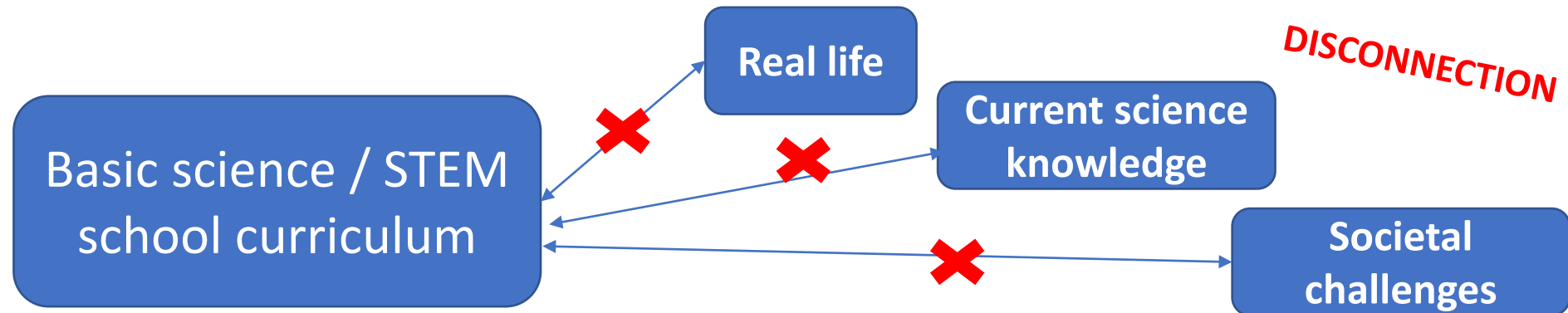
- **Jobs in STEM** are growing 3 times faster than in any other sector
- 7 million new STEM jobs in Europe in 2025, but not enough skilled people to fill them!
- Today **tech companies** fall short on engineering recruitment targets!

There is no sustainable future without a new generation of scientists.

Reason?

Misperception of science by society / at schools

Boring, abstract, complicated, hard, only for elite, only for men, does not pay, what career?



Existing science outreach programs are great, but have often limited impact / reach:

- **Content-wise:** for already interested audience (mostly technical / abstract information)
- **Number of students / schools:**
 - depends on “handful” of motivated teachers
 - limited capacity to implement extra-curriculum activities & limited awareness

How to effectively raise interest of youth in STEM?

✓ **Context** with real life, nature, humans, societal challenges is key 

PhD study, S. Zochling, CERN, University Wien

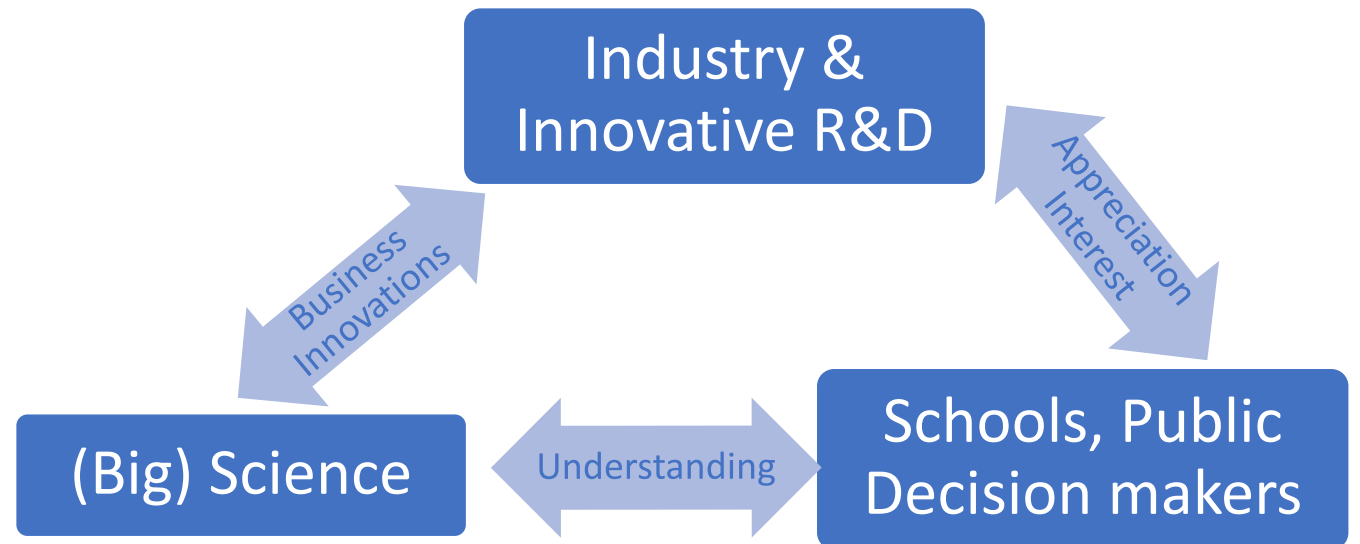
✓ **Modern** physics, **cutting-edge** technologies and its **applications**

✓ **Contribution** to society / humanity (especially relevant for girls!)

New unexplored avenue:

Include tech industry to provide the context through applications & careers

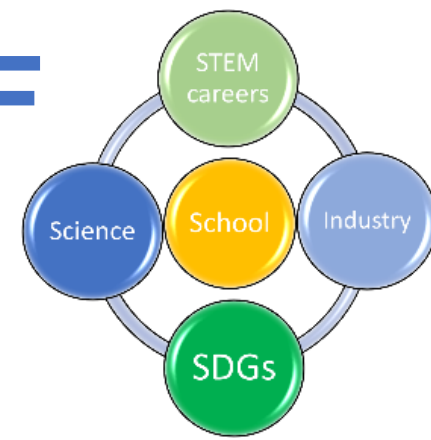
Recommended by ECFA in 2018



Strategy to make large impact

- ❖ Reach to **broad audience beyond “converted” students:**
provide new context-based content
- ❖ Integrate into **science school curricula:**
align with new education trends (multi-disciplinarity, SDGs, careers)

Working example: Youth@STEM4SF



- ✓ first-of-its-kind high school program
- ✓ connecting science with society & sustainability
- ✓ including real life experience through industry & scientific role models of both genders

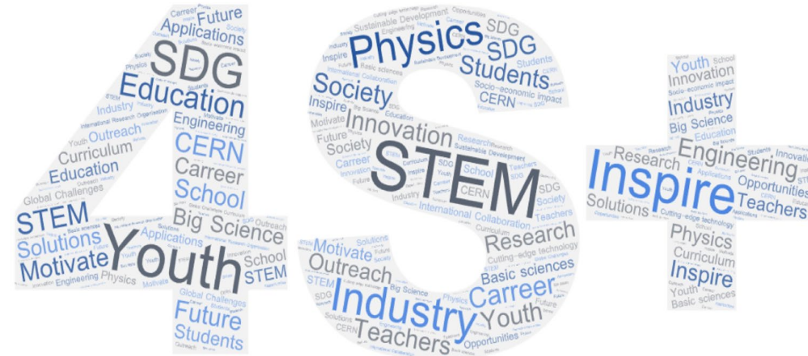
Whole classroom approach
especially non-scientifically oriented classes with general and diverse interest

Target groups:

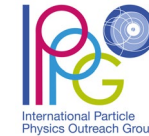
- 1) **Students talented for STEM**, but hesitating based on stereotypes and lack of information on relevance and career
- 2) **Future society leaders in all non-scientific fields**, often with negative attitude towards science

International concept

5 years design with multi-stakeholder community



Knowledge partners:

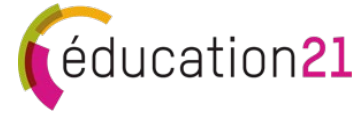


Approved by multi-disciplinary experts and multiple stakeholders from several countries:
Switzerland, Slovakia, Spain, Sweden, Slovenia...

Swiss pilot & proof-of-concept

11 May 2023

Financial partners:



Gymnase de Bugnon - Sevelin, **Lausanne**

55 students (~ 16 years)

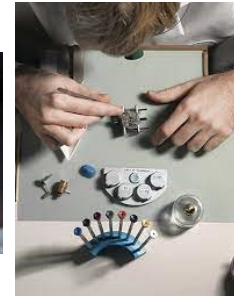
3 teachers

5 scientists & engineers (2 women)



Youth@STEM4SF: Thematic day & Follow up

1) Inspirational lecture from scientist: Applications from (particle) physics + career opportunities



2) Excursion to tech companies: Science in action for SDGs, career inspiration & role models



3) Student project with prizes: ➤ Internship in tech company
➤ Speech at UN Youth Forum



Impact: encouraging results (Swiss pilot)

*30% of students consider **new (STEM) career perspective** never envisaged before!*

*Most of girls found **physics** and sciences **more accessible** (thanks to role models)!*

*50% of students want to act as **ambassadors of science** in their future careers.*

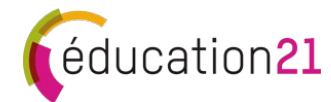
"I realized that sciences are truly important for the future of society and the key to sustainable development. The youth must take matters into their own hands."

"The program has inspired me to take a greater interest in sciences because there is more beyond what we learn in the limited scope of the classroom."

Recognition by education authorities

«Perfect example of pioneer program implementing new Swiss high school education plan»

Swiss national competence center for education on sustainable development



Scale-up plan

International Hackathon on “Science for SDGs”

Plans for 2024:

Scale up with 5-10 Swiss schools

First international pilot

Pre-event of Big Science Business Forum 2024



MARCH, 25>27 - 2024
HENRY FORD BUILDING,
FREIE UNIVERSITÄT, BERLIN

aim to create network of industries – ambassadors for STEM education



+ other partners

Big Science
Business
Forum
2024



Creation of new high school education resources connecting science with SDGs

