



# Education at CERN and in the EPPSU

Dr. Sascha Schmeling

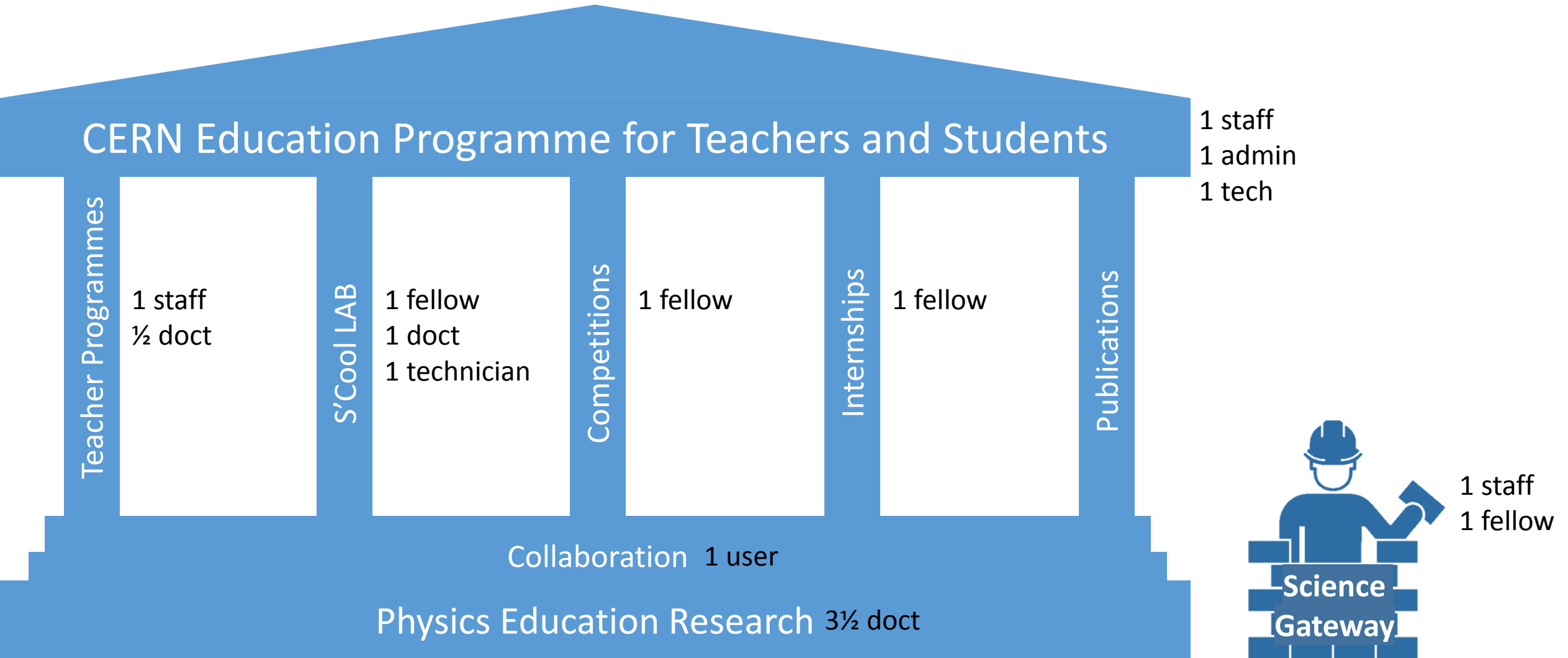


# “Education”

In this presentation, the term “Education” englobes CERN’s and partners’ programmes in formal and informal education, in contrast to general outreach and professional training for non-teachers<sup>1</sup>.

<sup>1</sup>Professional Development of Science Teachers is clearly included in “Education”

# Education @ CERN – Today



# Teacher Programmes 2016-2020

~ 33/year

~ 950/year

		#programmes	duration	#participants	#participants (MS + AMS)	#participants (NMS)
<b>2016</b>		<b>33</b>		<b>953</b>	<b>774</b>	<b>179</b>
	National Language Teacher Programmes	32		906		
	International Teacher Programmes	1	3w	47		
<b>2017</b>		<b>33</b>		<b>952</b>	<b>779</b>	<b>173</b>
	National Language Teacher Programmes	31		865		
	International Teacher Programmes	2	3w / 2w	43 / 44		
<b>2018</b>		<b>33</b>		<b>906</b>	<b>754</b>	<b>152</b>
	National Language Teacher Programmes	31		814		
	International Teacher Programmes	2	3w / 2w	46 / 46		
<b>2019</b>		<b>31</b>		<b>904</b>	<b>732</b>	<b>172</b>
	National Language Teacher Programmes	29		812		
	International Teacher Programmes	3	3w / 2w	45 / 47		
<b>2020</b>		<b>3</b>		<b>80</b>	<b>56</b>	<b>24</b>
	National Language Teacher Programmes	3		80		



# S'Cool LAB 2016-2020

Participants	<b>above target</b> Total	S'Cool LAB Day S'Cool LAB Plus Escape Room	Cloud Chamber Workshops	<b>to be revived</b> Summer Camp (2 week programme)	Other
<b>2016</b>	4400	1030	3370		1430
<b>2017</b>	5830	1030	4800	24	1430
<b>2018</b>	6090	640	5420	30	1450
<b>2019</b>	6480	660	5820		1380
<b>2020</b>	1432	80	1352		47

# Beamline for Schools 2016-2020

	~ 180/year Proposals	~ 45 #countries	thereof #MS+AMS	strong thereof #NMS	~ 1400/year Participant	Shortlisted	Winning Teams
<b>2016</b>	150	37	17	20	1250	21	PL, UK
<b>2017</b>	180	43	20	23	1500	21	CA, IT
<b>2018</b>	195	42	20	22	1500	24	IN, PH
<b>2019</b>	178	48	20	28	1300	20	NL, US
<b>2020</b>	198	47	17	30	1400	23	CH, DE

# High-School Students Internship Programme

2016-2020

	Participants	thereof female	thereof Male	~ 5/year Countries	successful Additional Programme
<b>2017</b>	116	48	68	BG, FR, HU, NO, PT	
<b>2018</b>	118	40	78	CZ, IL, NL, SE, PL	
<b>2019</b>	143	66	77	AT, DE, ES, FI, SK	DE
<i>now 2021</i>	<i>144</i>			<i>BE, CH, DK, GR, IT, RO</i>	

# Physics Education Research

2017 2020  
**~ 8 part-time researchers**

	Talks at International Conferences	Invited Talks at International Conferences	Invited Talks at National Conferences	Invited Talks at Teacher Conferences	Peer-reviewed Publications
<b>2016</b>	2		1		8
<b>2017</b>	1		2		13
<b>2018</b>	4	2	1	6	6
<b>2019</b>	4	2			7
<b>2020</b>	1		1	2	8

This is a pure extract, not counting national conferences, seminars, doctoral schools, etc. Publications only count peer-reviewed publications.





# European Strategy for Particle Physics – Update 2020 (EPPSU)

“The Strategy is above all driven by science and thus presents the scientific priorities for the field,” says Ursula Bassler, President of the CERN Council. “The European Strategy Group (ESG) – a special body set up by the Council – successfully led a strategic reflection to which several hundred European physicists contributed.” The scientific vision outlined in the Strategy should serve as a guideline to CERN and facilitate a coherent science policy across Europe.

# Strategy Document

## Environmental and Societal Impact

*Particle physics*, with its fundamental questions and technological innovations, *attracts bright young minds*.

*Their education* and training are *crucial for the needs* of the field and *of society at large*.

Public engagement, *education* and communication in particle physics *should continue to be recognised as important components of the scientific activity and receive adequate support*.

Particle physicists should work with the broad community of scientists to intensify engagement between scientific disciplines.

*The particle physics community should work with educators and relevant authorities to explore the adoption of basic knowledge of elementary particles and their interactions in the regular school curriculum.*

# Deliberation Document

*CERN has thriving teachers and students programmes, which are also capable of generating valuable data that should be made available to the education research community.*

Education and training of the next generation of particle physicists and engineers are crucial to sustaining the field in the long term. Good particle physics university education is guaranteed by the many CERN users in academic positions.

*Vocational education in the fields relevant for CERN should also be encouraged. It is important to be inclusive for all students, and initiatives to address under-represented groups should be supported.*

The *Science Gateway*, under construction at CERN, *will* offer a golden opportunity to *reinforce* particle physics public engagement and education, which should be made to radiate across the whole of Europe.

# Education @ CERN – Future

