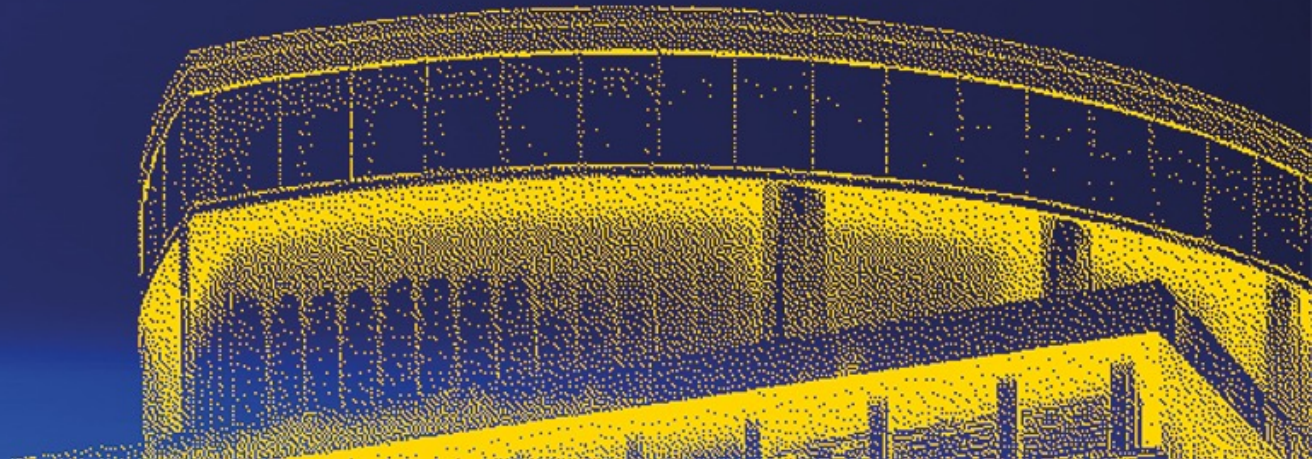


SWEDISH **BIG SCIENCE FORUM**



EXPERIENCES FROM RESEARCH FACILITIES STRENGTHEN INDUSTRY



Barbro Åsman
Professor emeritus
Stockholm University
CERN



Patrik Sandgren
Director ICT & Innovation
TEKNIKFÖRETAGEN

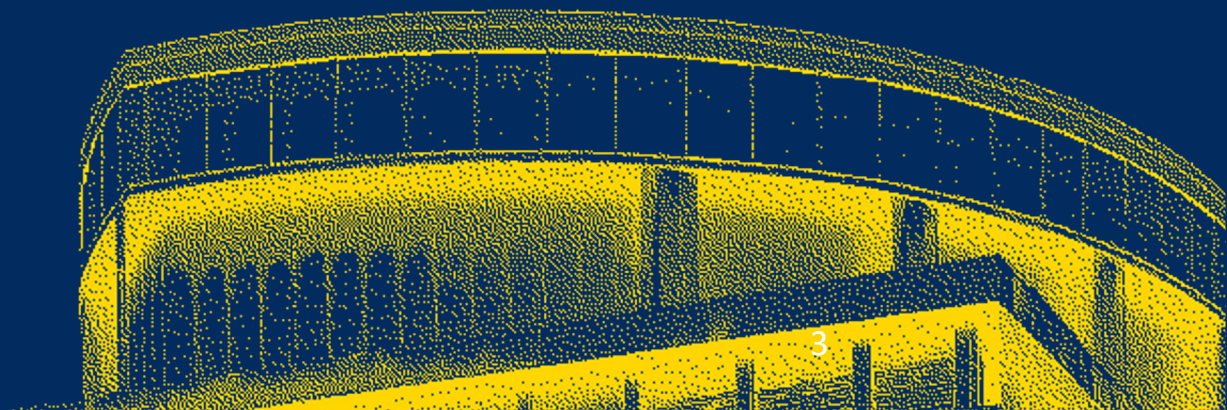


Elias Waagaard
Doctoral student
CERN

Being a PhD student at CERN

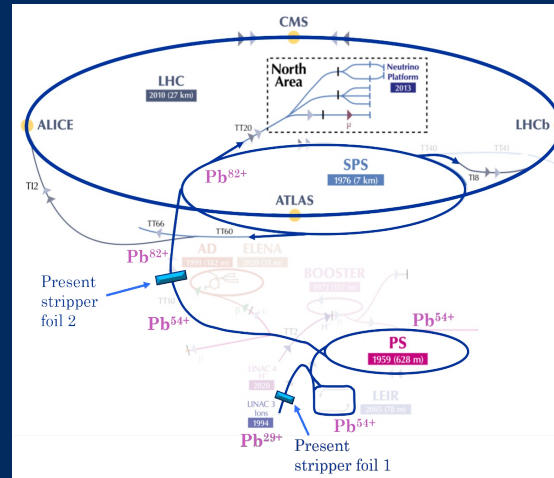
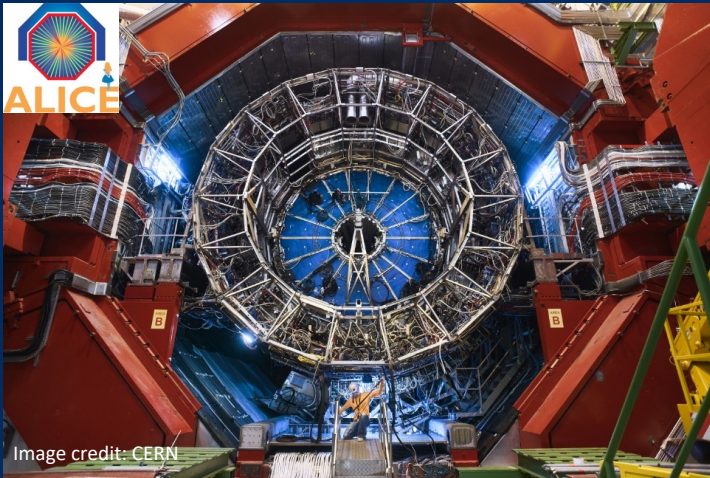
Why Big Science facilities matter for young graduates and Swedish industry

Elias Waagaard (CERN/EPFL)
31-01-2024



Who am I?

- B.Sc. + M.Sc. at Uppsala University – Particle/Nuclear Physics
- **PhD student** (CERN / EPFL) since 2022
- My **research topic**: identify future ion types for Large Hadron Collider



CERN accelerator complex



Why did I join CERN?

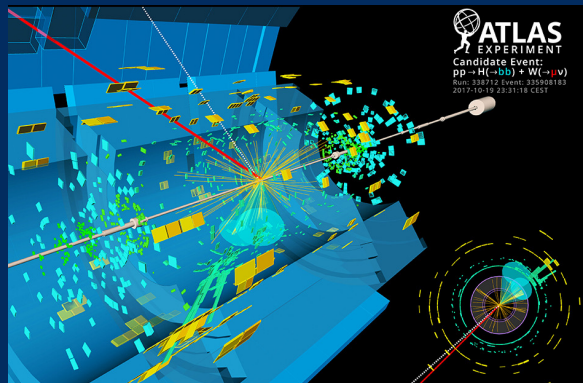
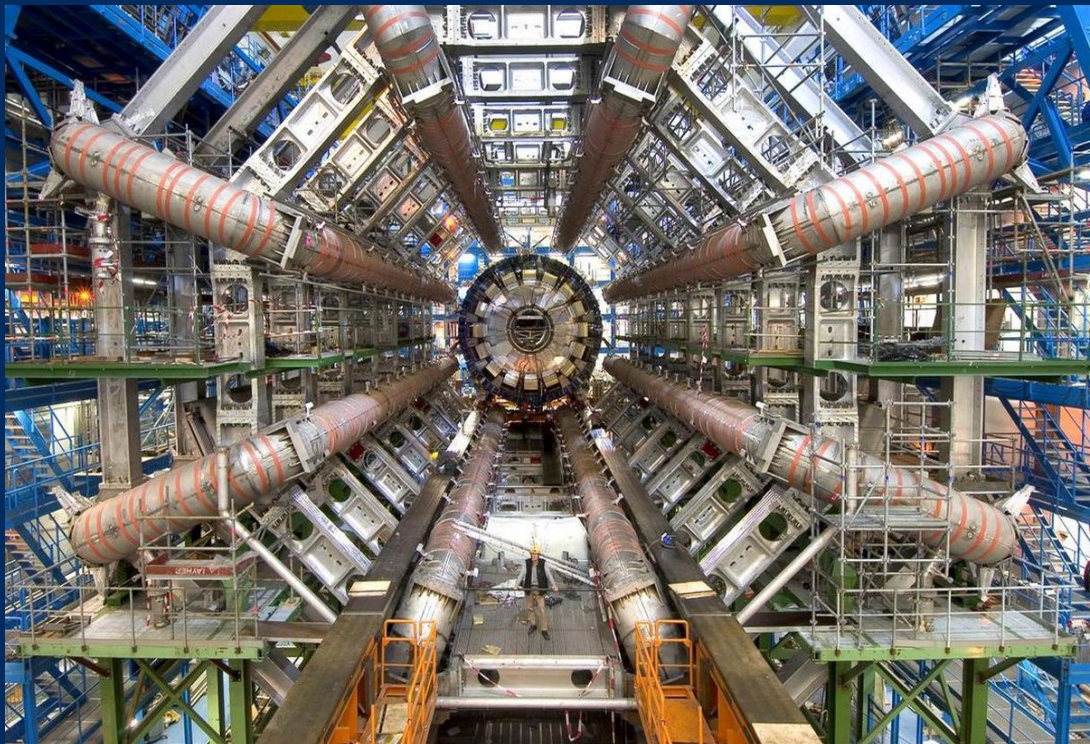


Image credit: CERN / ATLAS



Being a student / graduate at CERN

- CERN offers many **entry programmes**, especially for member states
 - Physics, math, IT, engineering, procurement, etc
- I did all the CERN student programmes – what did I learn so far?



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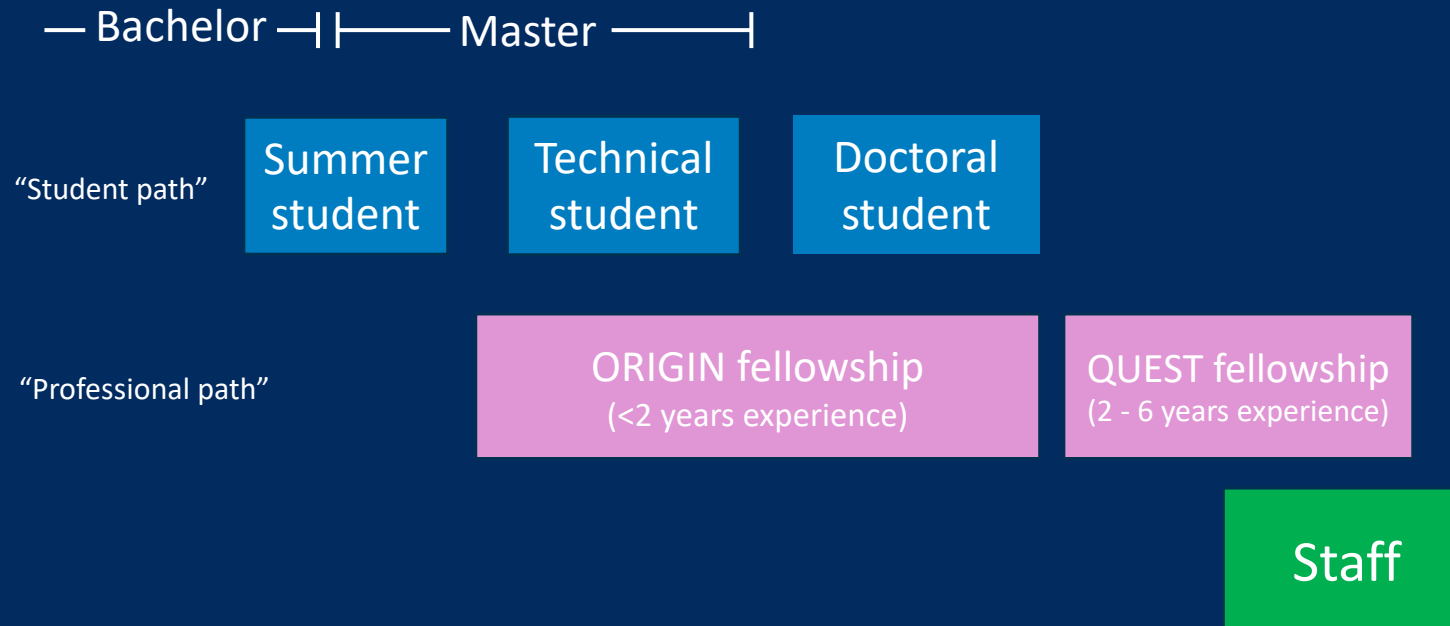


Image credit: CERN

Being a student / graduate at CERN

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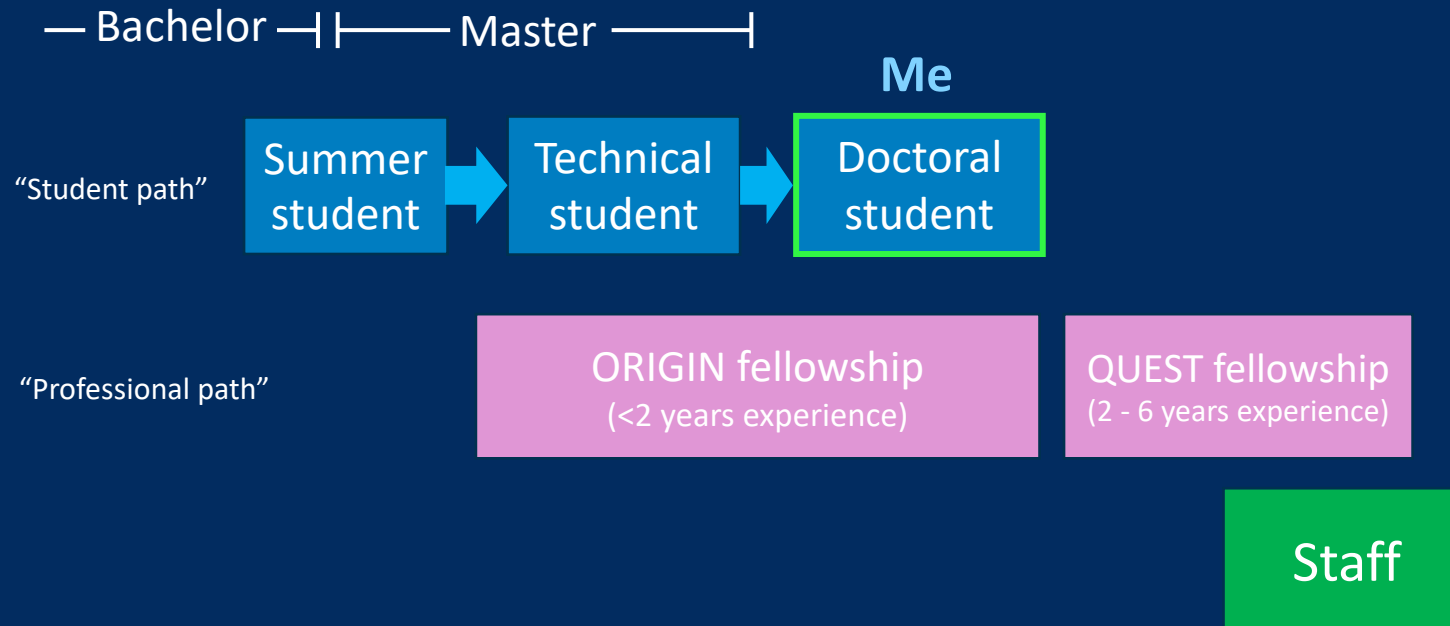


Image credit: CERN

...but paths can really vary at CERN!

What can CERN alumni offer Swedish companies?

- Valuable skills I learnt so far at CERN:

What can CERN alumni offer Swedish companies?

- Valuable skills I learnt so far at CERN:

Technical skills



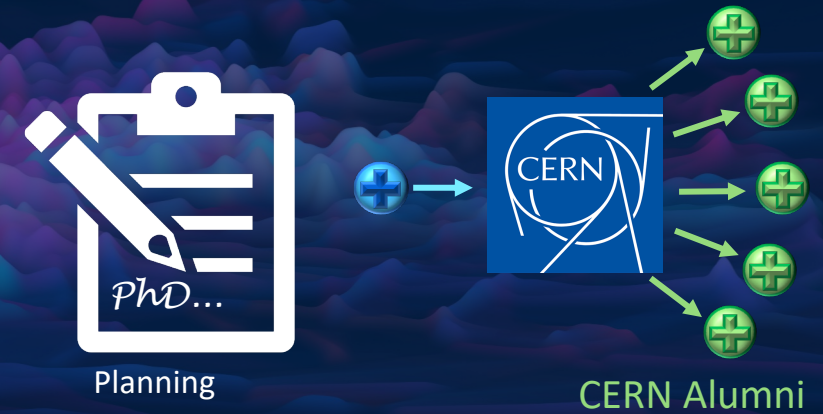
What can CERN alumni offer Swedish companies?

- Valuable skills I learnt so far at CERN:

Technical skills



Soft skills



Competences from CERN – a unique chance for Sweden

- If CERN has so much to offer, why so few Swedish students here?

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Promoting CERN student opportunities:

Kommande event

02 FEBRUARI	05 FEBRUARI	06 FEBRUARI	08 FEBRUARI
LUND - LTH	UPPSALA - UU	STOCKHOLM - KTH/SU	GÖTEBORG - CHALMERS
Karriärväg: Big Science Lunchseminarium med Elias Walter Waagaard som doktorerar i acceleratorfysik på CERN	Karriärväg: Big Science Lunchseminarium med Elias Walter Waagaard som doktorerar i acceleratorfysik på CERN	Karriärväg: Big Science Lunchseminarium med Elias Walter Waagaard som doktorerar i acceleratorfysik på CERN	Karriärväg: Big Science Lunchseminarium med Elias Walter Waagaard som doktorerar i acceleratorfysik på CERN
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Competences from CERN – a unique chance for Sweden

- If CERN has so much to offer, why so few Swedish students here?
- 25 by '25 initiative to highlight applicants
- Competences from CERN are crucial for Swedish
 - industry
 - universities
 - Big Science facilities



Promoting CERN student opportunities:

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Thank you for your attention!



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Barbro Åsman
Professor emeritus
Stockholm University
CERN



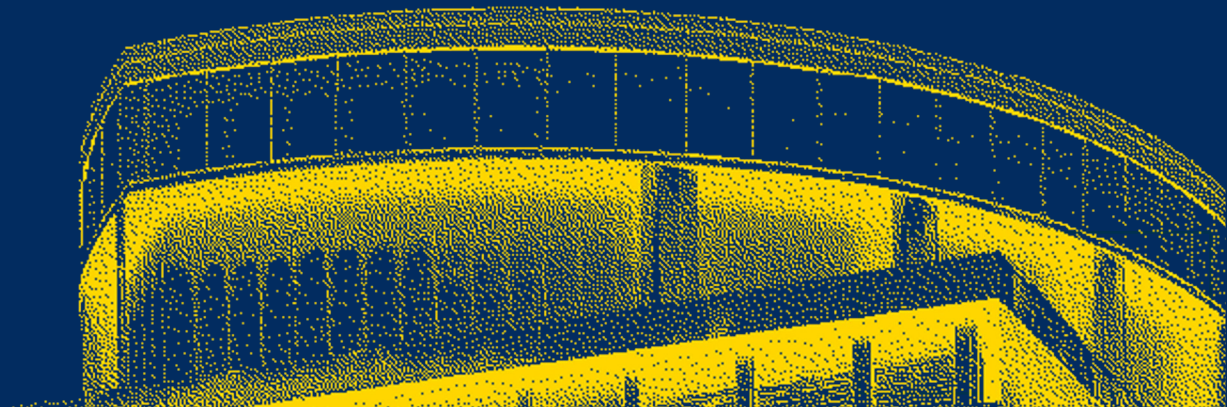
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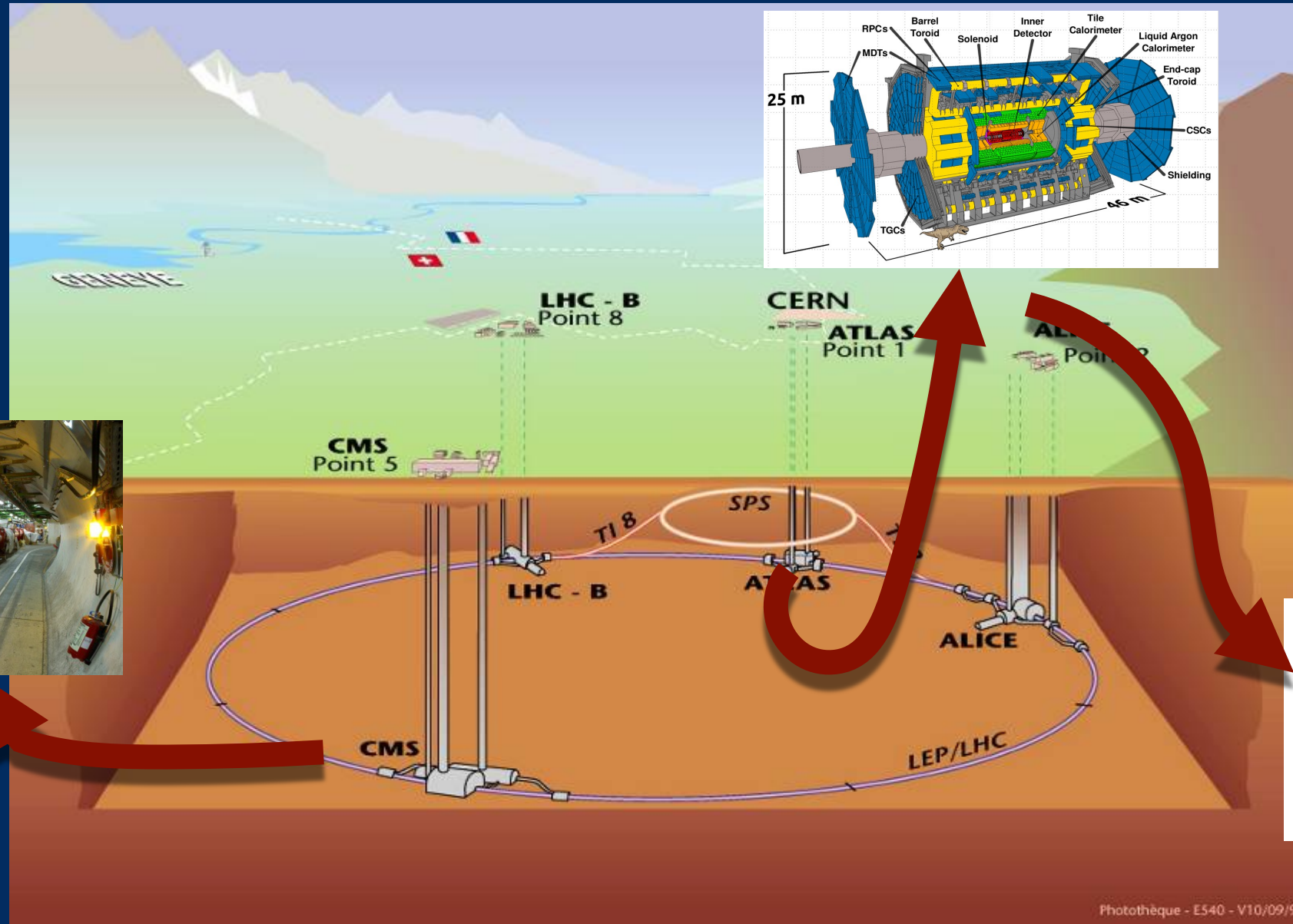
Elias Waagaard
Doctoral student
CERN

How to increase the Swedish presence at CERN

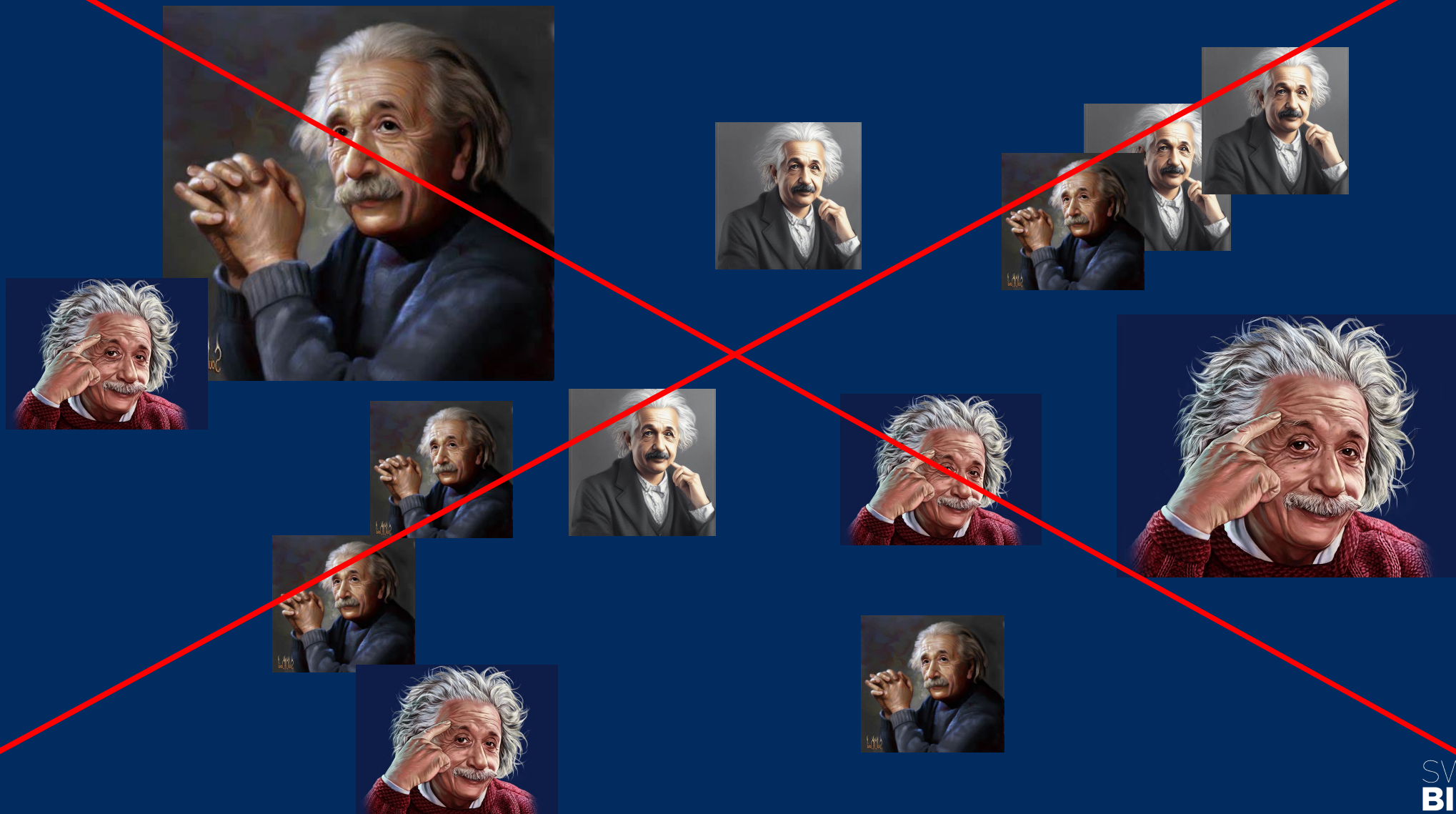
Barbro Åsman
professor emeritus
Stockholm University



A quick overview of CERN's main project LHC



Personnel at CERN



Personnel at CERN

	Staff (2658)	Users (11860)
• Research Physicists	82	10054
• Scientific & Eng. Work	2065	1733
• Technical Work		
• Administrators	462	71
• Swedish	24	63/103
• Finnish	29	79/ 90
• Danish	16	51/ 49

Young people at CERN

Doctoral Student Programme

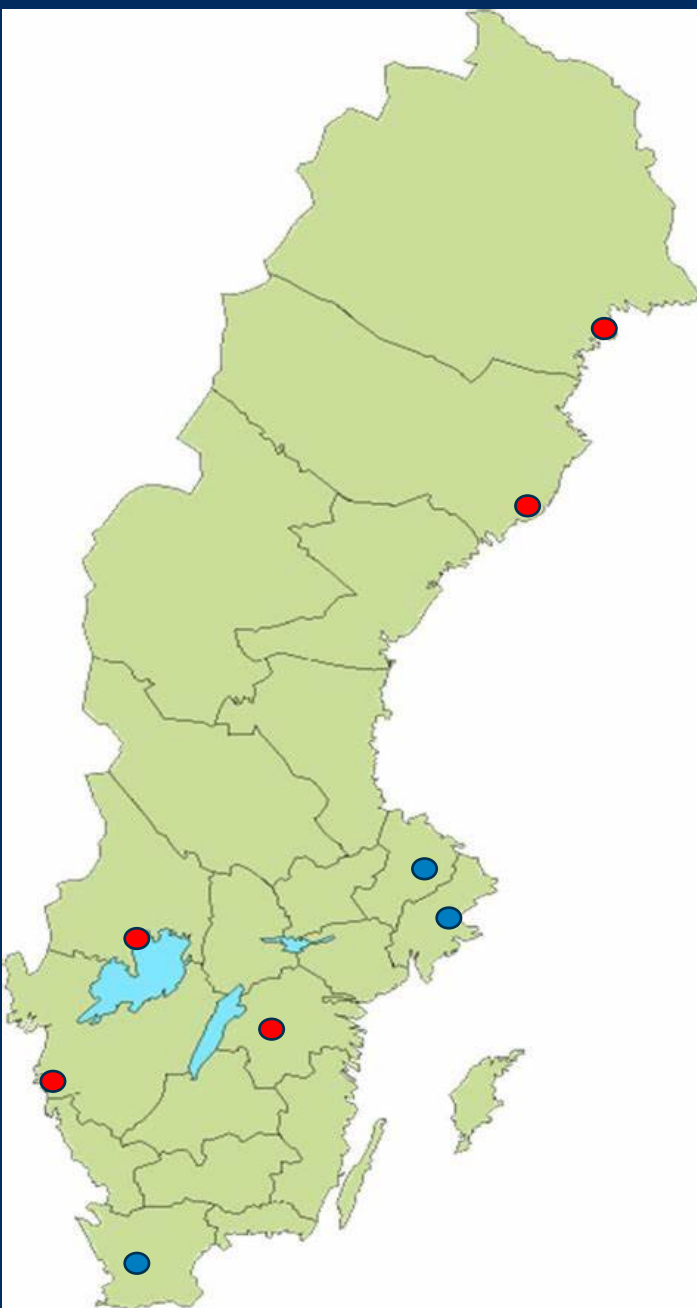
Technical Student Programme

Administrative Student Programme

Summer Student Opportunities

Openlab Summer Student Programme





Universities with particle physics:

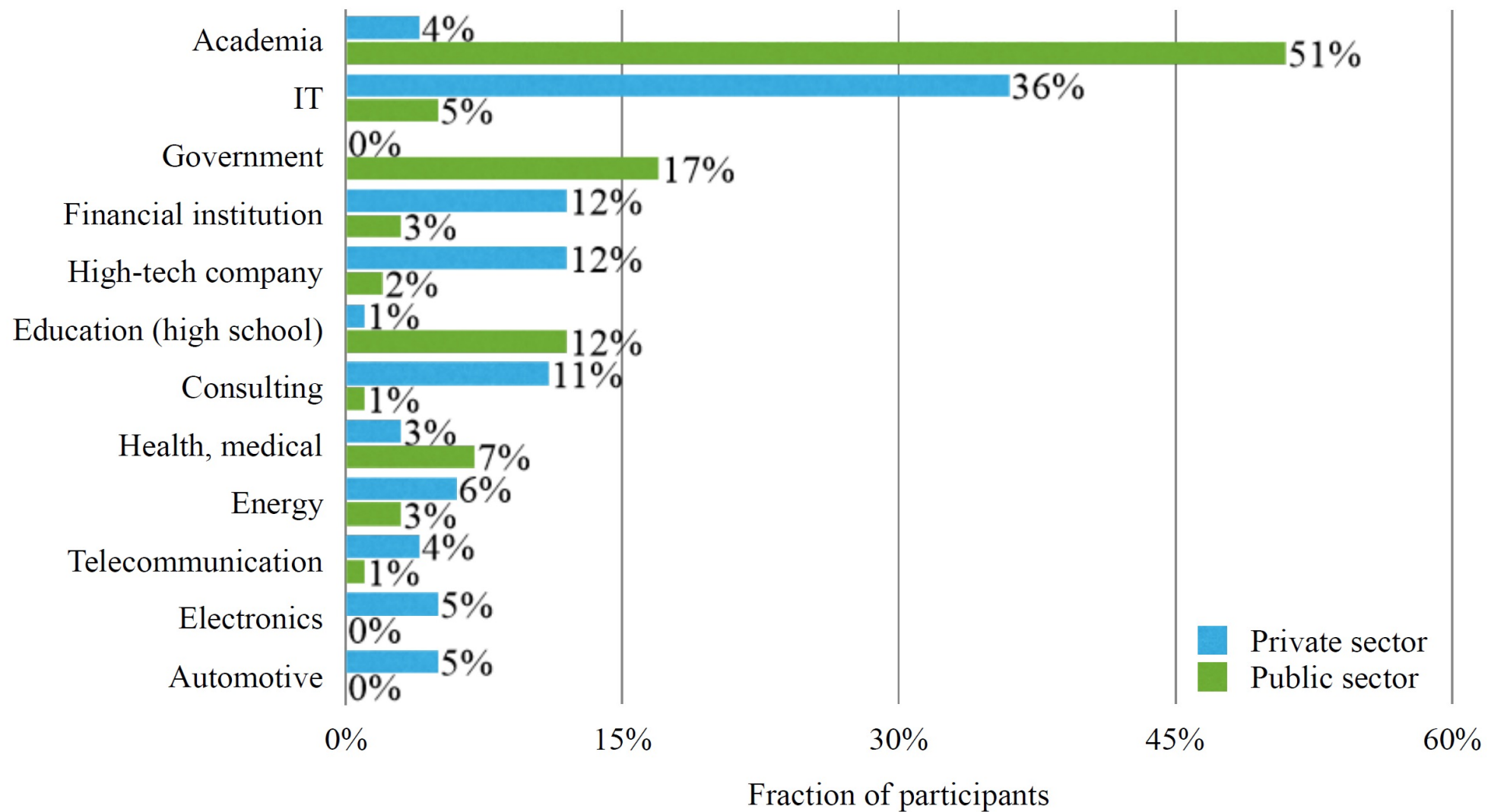
Stockholm University & KTH,
Lund University
Uppsala University

Universities with technology and/or physics:

Luleå Technical University
Umeå University
Linköping University
Gothenburg University & CTH
Karstad University

What to do!

- Establish a sustainable contact at each relevant university
- More tours
- Find economic support for student programs
- Increase CERN's visibility in social media
 - Linkedin – established engineers
 - Instagram – students
- ...



Women
559
21 %

Figure 3a: Distribution of Female Staff Members by Professional Category – 31.12.2022

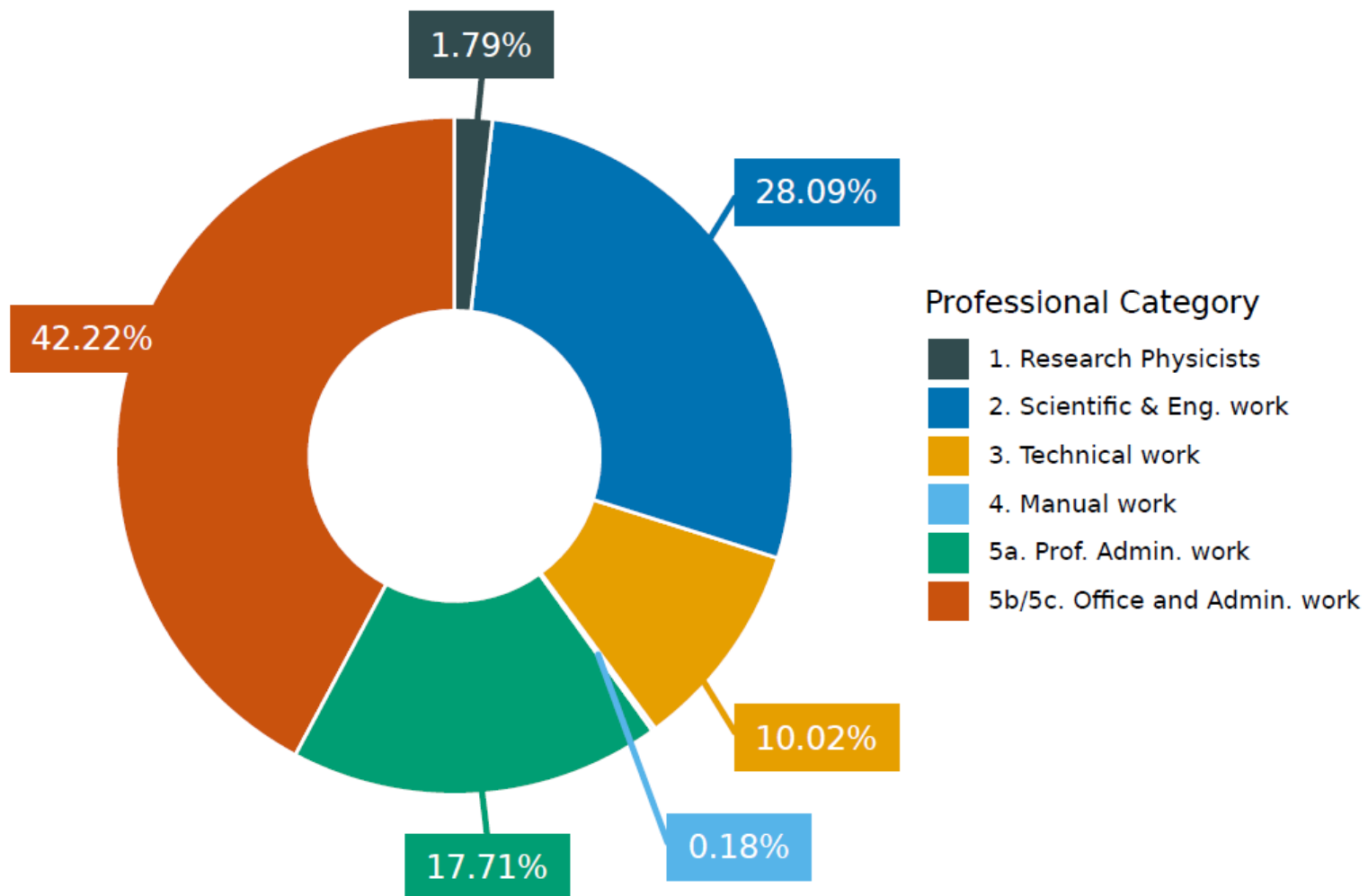
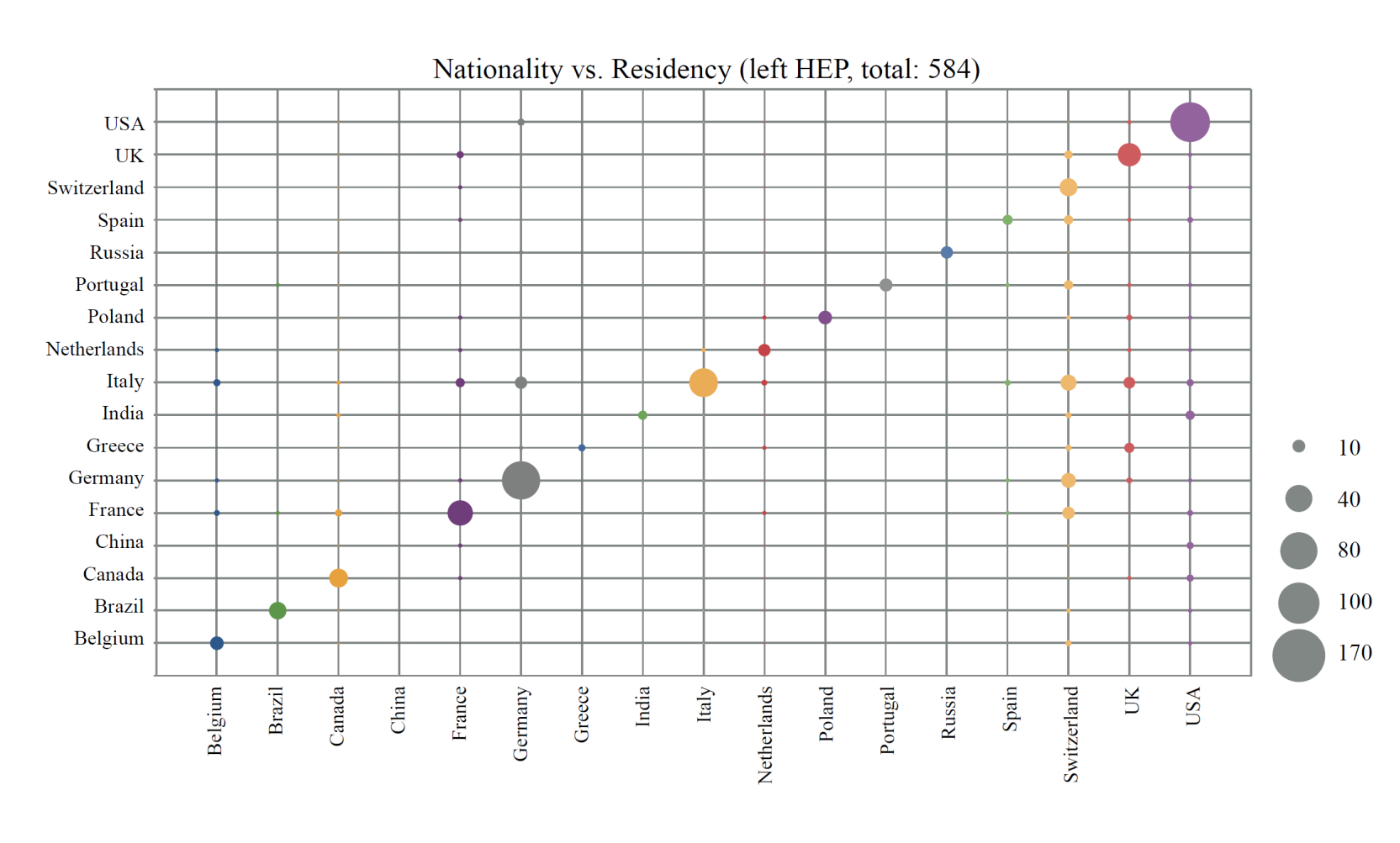


Table 3: Members of the Personnel by Professional Category and Gender – 31.12.2022

Professional Category			Status Group											
			Staff Members			Fellows			MPA (excl. Users)			Users		
			F	M	Total	F	M	Total	F	M	Total	F	M	Total
1	Research Physicists	HC %	10 12.20	72 87.80	82 3.09	23 23.96	73 76.04	96 10.67	115 15.33	635 84.67	750 49.47	2,149 21.37	7,905 78.63	10,054 84.77
2	Scientific & Eng. work	HC %	157 12.68	1,081 87.32	1,238 46.58	149 24.67	455 75.33	604 67.11	182 27.29	485 72.71	667 44.00	132 11.38	1,028 88.62	1,160 9.78
3	Technical work	HC %	56 6.77	771 93.23	827 31.11	23 16.55	116 83.45	139 15.44	2 7.41	25 92.59	27 1.78	59 10.30	514 89.70	573 4.83
4	Manual work	HC %	1 2.04	48 97.96	49 1.84				3 17.65	14 82.35	17 1.12	2 100.00		2 0.02
5a	Prof. Admin. work	HC %	99 53.23	87 46.77	186 7.00	39 75.00	13 25.00	52 5.78	12 85.71	2 14.29	14 0.92	49 75.38	16 24.62	65 0.55
5b/5c	Office and Admin. work	HC %	236 85.51	40 14.49	276 10.38	8 88.89	1 11.11	9 1.00	33 80.49	8 19.51	41 2.70	5 83.33	1 16.67	6 0.05
Total		HC %	559 21.03	2,099 78.97	2,658 100.00	242 26.89	658 73.11	900 100.00	347 22.89	1,169 77.11	1,516 100.00	2,394 20.19	9,466 79.81	11,860 100.00

Table 24: Staff Members by Nationality and Eligibility to International Benefits at Time of Recruitment – 31.12.2022

Nationality	International Benefits Status				Grand Total	
	International		Non-international			
	HC	%	HC	%	HC	%
AT	56	3.08			56	2.11
BE	96	5.28	4	0.48	100	3.76
BG	14	0.77			14	0.53
CH	76	4.18	128	15.22	204	7.67
CY	2	0.11			2	0.08
CZ	12	0.66			12	0.45
DE	165	9.08	4	0.48	169	6.36
DK	15	0.83	1	0.12	16	0.60
ES	165	9.08	14	1.66	179	6.73
FI	28	1.54	1	0.12	29	1.09
FR	305	16.79	645	76.69	950	35.74
GB	186	10.24	13	1.55	199	7.49
GR	62	3.41			62	2.33
HR	2	0.11			2	0.08
HU	15	0.83	1	0.12	16	0.60
IL	1	0.06			1	0.04
IN	6	0.33	1	0.12	7	0.26
IT	304	16.73	19	2.26	323	12.15
LT	2	0.11			2	0.08
NL	59	3.25	3	0.36	62	2.33
NO	13	0.72			13	0.49
PK	4	0.22			4	0.15
PL	91	5.01			91	3.42
PT	54	2.97	4	0.48	58	2.18
RO	23	1.27	1	0.12	24	0.90
RS	6	0.33			6	0.23
SE	23	1.27	1	0.12	24	0.90
SI	1	0.06			1	0.04
SK	13	0.72	1	0.12	14	0.53
TR	5	0.28			5	0.19
UA	3	0.17			3	0.11
NMS	10	0.55			10	0.38
Total	1,817	100.00	841	100.00	2,658	100.00



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BREAK

***Swedish fika – refreshments with opportunities
for informal networking and 1-to-1 meetings***

