Programme Objectives

Konrad Jende, Danish Teacher Programme 2015

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Why do we do all this?

We do this because …

- school students are interested in particle physics
  - the field faces many unresolved problems

    (Elster 2007, Matthews 2007, Finlayson & Roach 2007, Christidou 2006, Lavonen et al. 2005)
  - the field produces inventions and discoveries that have the potential to change the world

    (Elster 2007, Matthews 2007, Finlayson & Roach 2007. Christidou 2006)

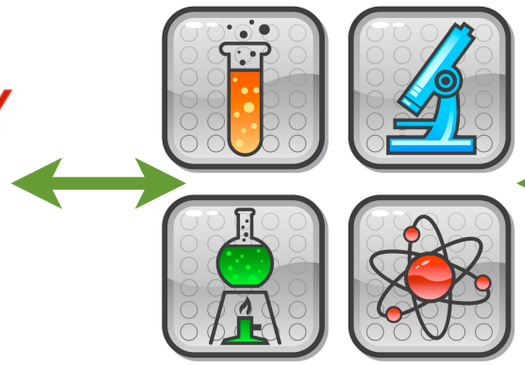
- school students have positive attitudes towards Science
  - but (unfortunately) they do not have them towards school science

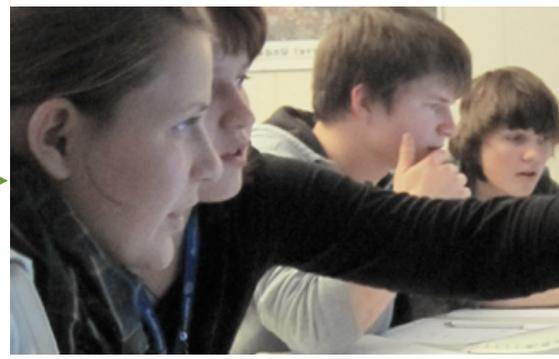
    (Osborne et al. 2003, Sjøberg & Schreiner 2010)

- Europe and the world needs scientists and we need to educate students about '*the major explanations of the material world that science offers and about the way science works*'

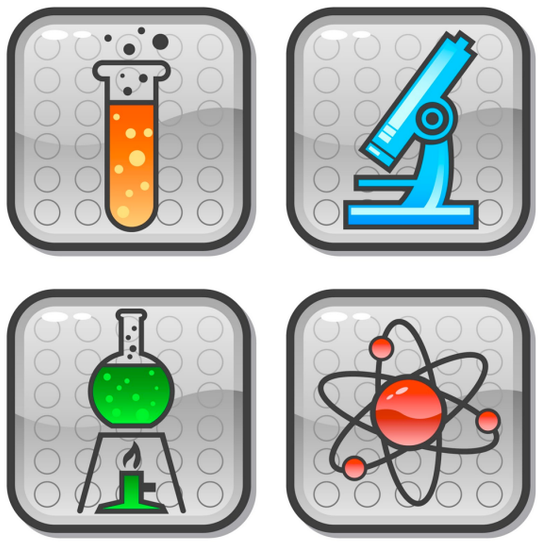
  (Osborne & Dillon 2008, p. 15)

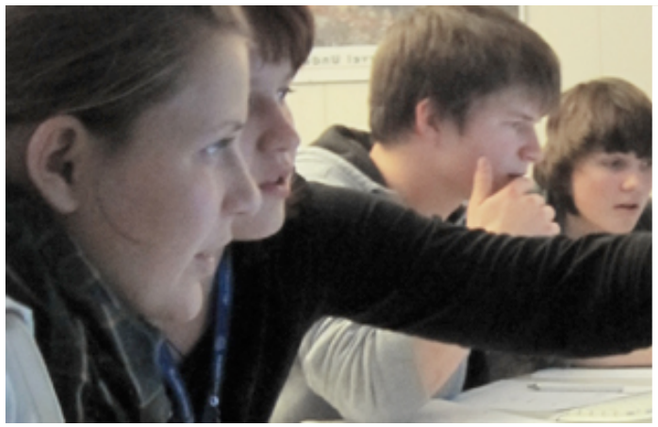
How to bring modern science into classroom?



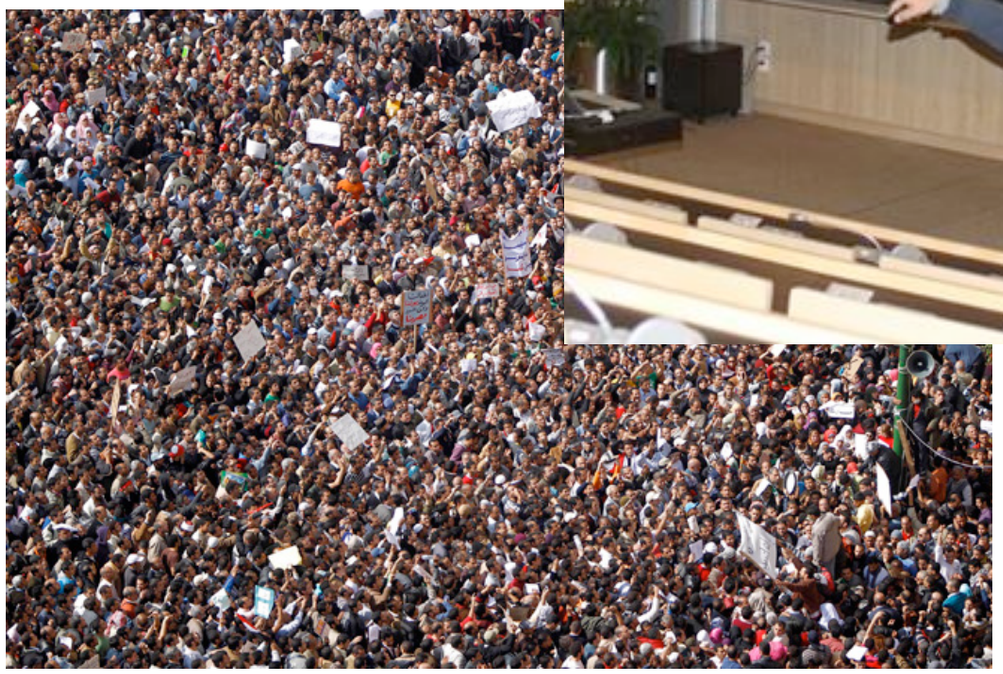


How to bring modern science into classroom?





We need you!



Our objectives

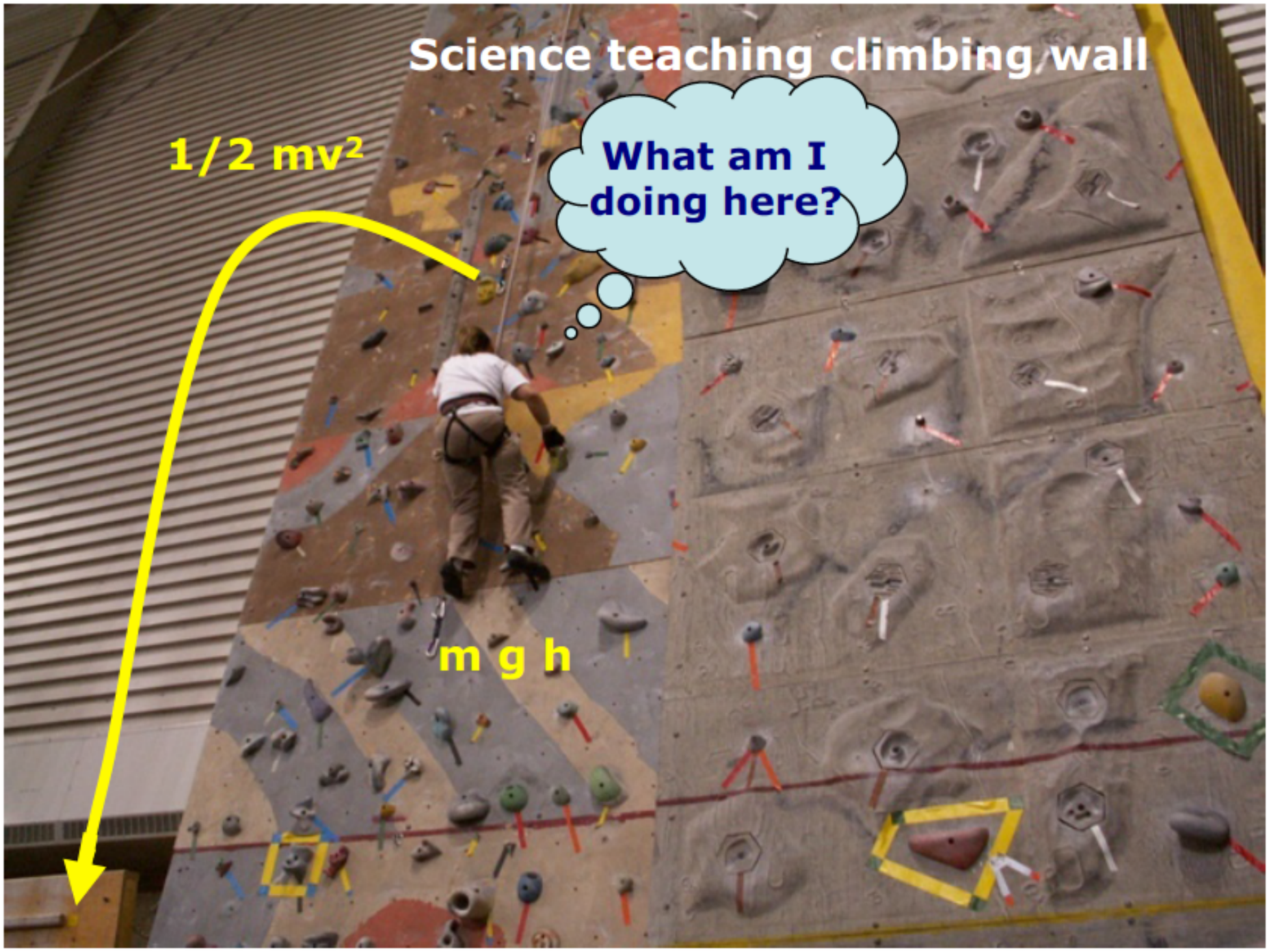
- Raise and Maintain the interest of students in moderns science
  - Motivate them to continue scientific education at school
  - help them to better understand the physical world

- Instil a feeling of mystery and discovery potential
  - Motivate students to study science/engineering at universities

- Improve scientific literacy
  - Prepare the future generation of scientists/engineers

How researchers view science

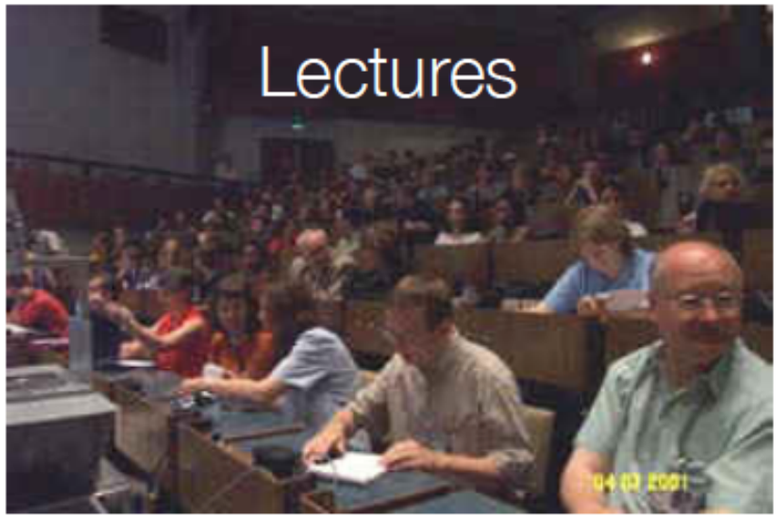
How students view science



Take students on a sight-seeing tour

Link modern physics to school curriculum

CERN's Teacher Programmes



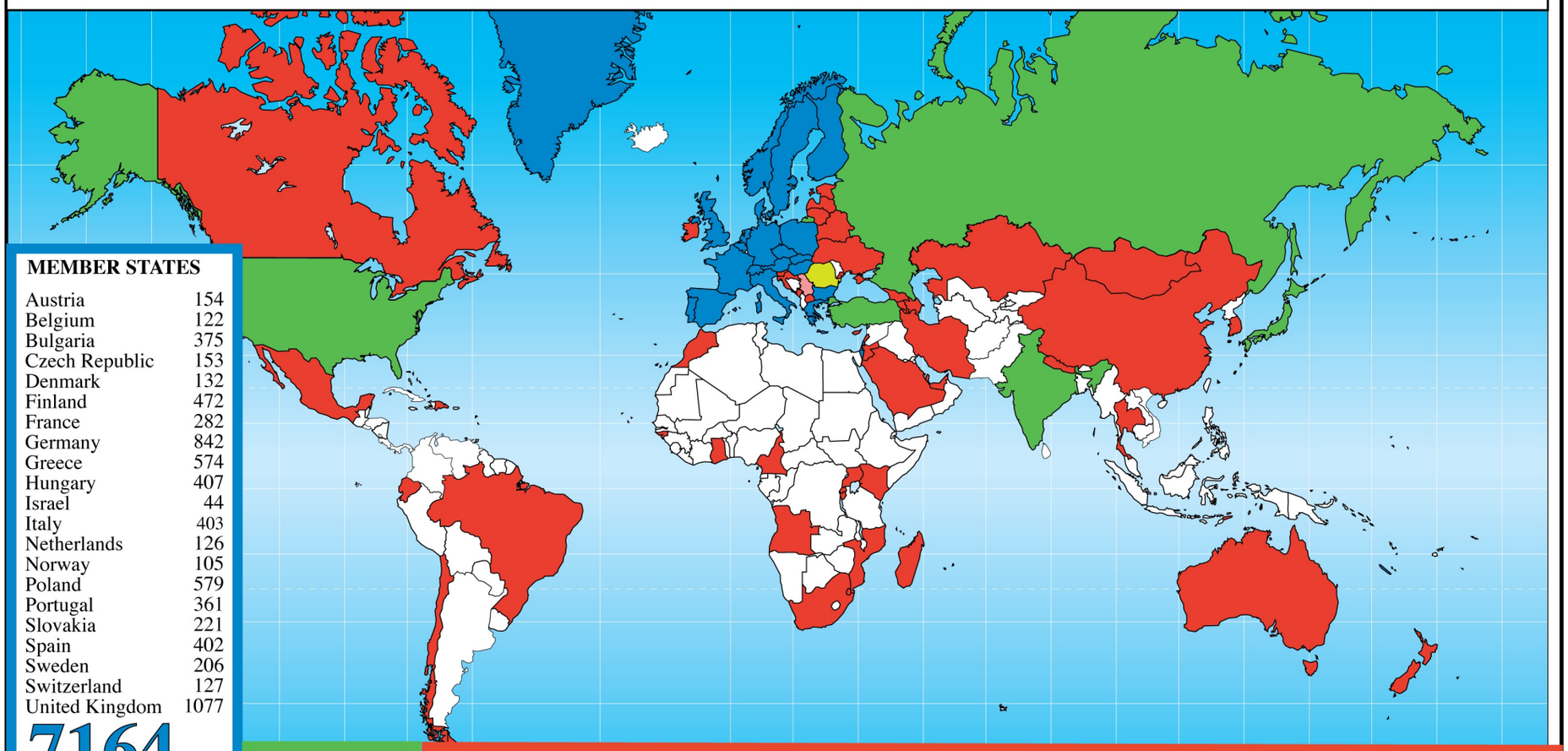
CERN’s Teachers’ Programmes

(1) 2 days to one week long national teachers’ programmes (NTP) in native language

(2) three week long High School Teachers Programme (HST) in English

CERN's Teachers' Programmes - Stats 1

Teacher Programme Participants 1998 - 2014 (Total: 8430)



MEMBER STATES

Austria	154
Belgium	122
Bulgaria	375
Czech Republic	153
Denmark	132
Finland	472
France	282
Germany	842
Greece	574
Hungary	407
Israel	44
Italy	403
Netherlands	126
Norway	105
Poland	579
Portugal	361
Slovakia	221
Spain	402
Sweden	206
Switzerland	127
United Kingdom	1077

7164

CANDIDATE FOR ACCESSION

Romania	13

ASSOCIATE MEMBER IN THE PRE-STAGE TO MEMBERSHIP

Serbia	47

OBSERVER STATES

India	3
Japan	6
Russia	279
Turkey	74
USA	92

454

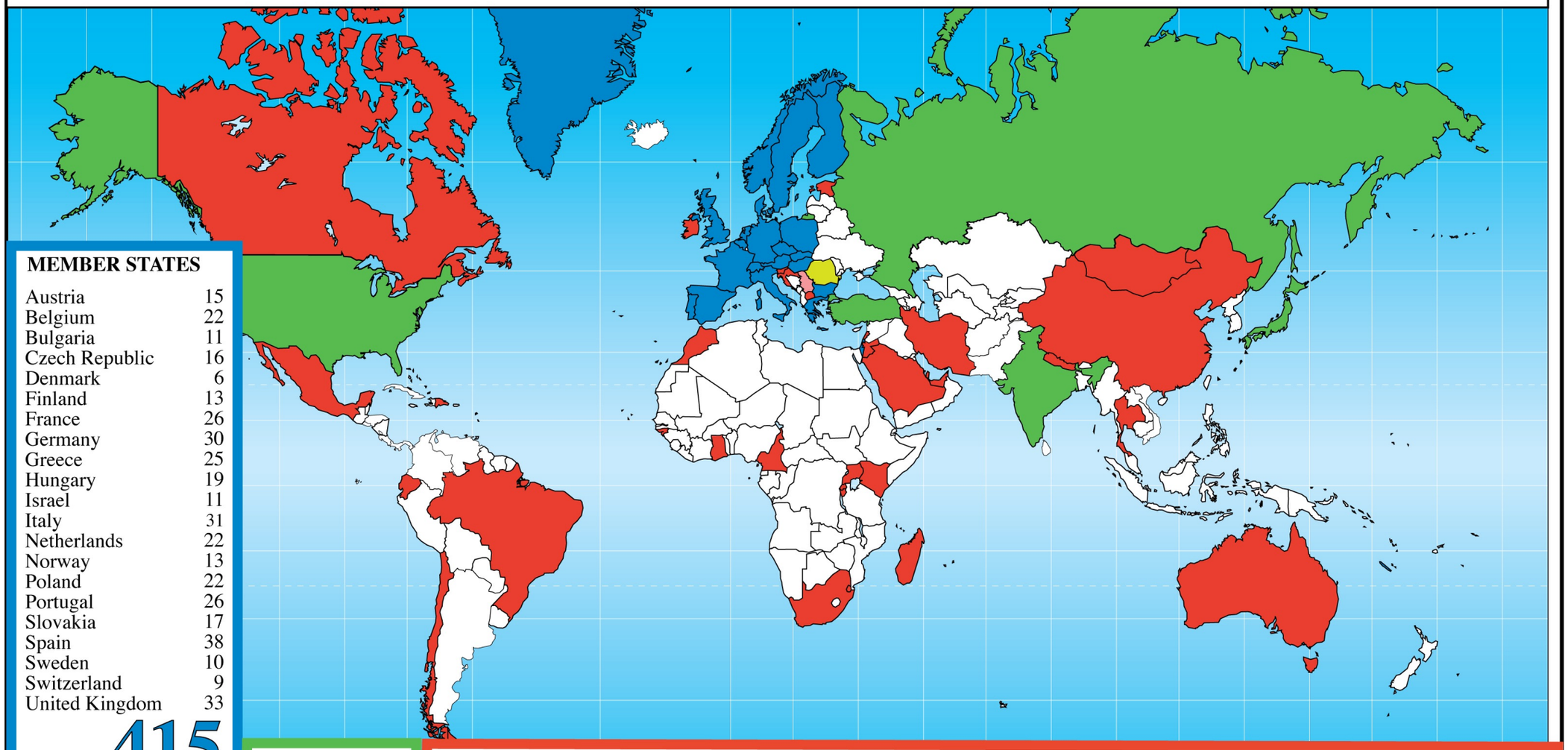
OTHERS

Angola	7	Chile	3	Ireland	7	Montenegro	13	Slovenia	21
Armenia	1	China	2	Jordan	11	Morocco	2	South Africa	6
Australia	6	Croatia	2	Kazakhstan	5	Mozambique	19	South Korea	48
Azerbaijan	1	Cyprus	8	Kenya	4	Nepal	1	Swaziland	1
Belarus	2	Dominican Rep.	24	Latvia	1	New Zealand	1	Thailand	10
Brazil	144	Ecuador	2	Lebanon	1	Palestine (O.T.)	1	T.F.Y.R.O.M.	11
Burundi	2	Estonia	54	Lithuania	16	Qatar	1	Timor-Leste	7
Cameroon	4	Georgia	88	Madagascar	2	Rwanda	20	Uganda	3
Canada	7	Ghana	6	Malta	36	Sao Tome	5	Ukraine	113
Cape Verde	4	Guinea Bissau	1	Mexico	10	Saudi Arabia	1	U.A.E.	1
		Iran	3	Mongolia	1	Singapore	2		

752

CERN's Teachers' Programmes - Stats 2

HST Programme Participants 1998 - 2014 (Total: 630)



MEMBER STATES

Austria	15
Belgium	22
Bulgaria	11
Czech Republic	16
Denmark	6
Finland	13
France	26
Germany	30
Greece	25
Hungary	19
Israel	11
Italy	31
Netherlands	22
Norway	13
Poland	22
Portugal	26
Slovakia	17
Spain	38
Sweden	10
Switzerland	9
United Kingdom	33

415

CANDIDATE FOR ACCESSION

Romania	12

ASSOCIATE MEMBER IN THE PRE-STAGE TO MEMBERSHIP

Serbia	5

OBSERVER STATES

India	3
Japan	6
Russia	5
Turkey	4
USA	70

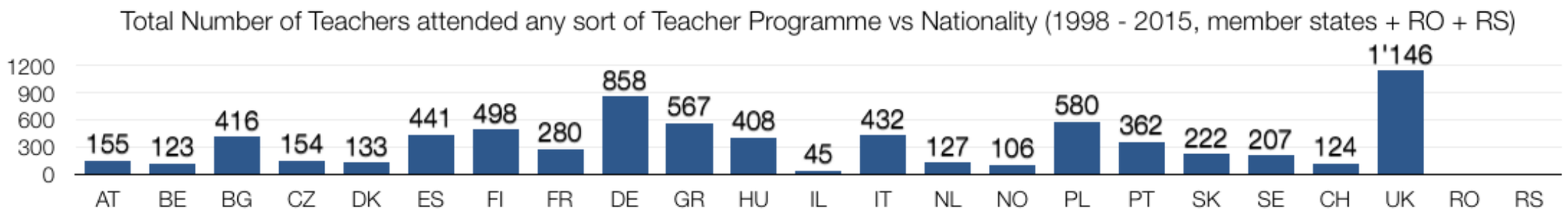
88

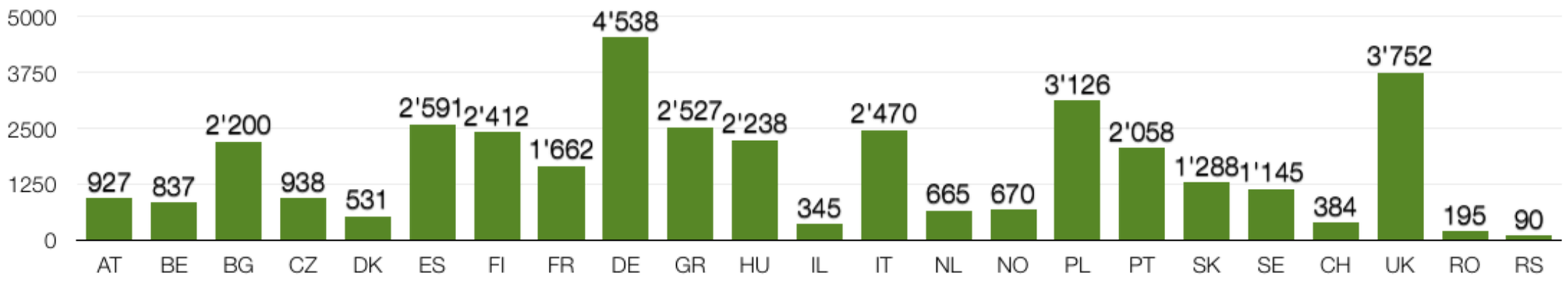
OTHERS

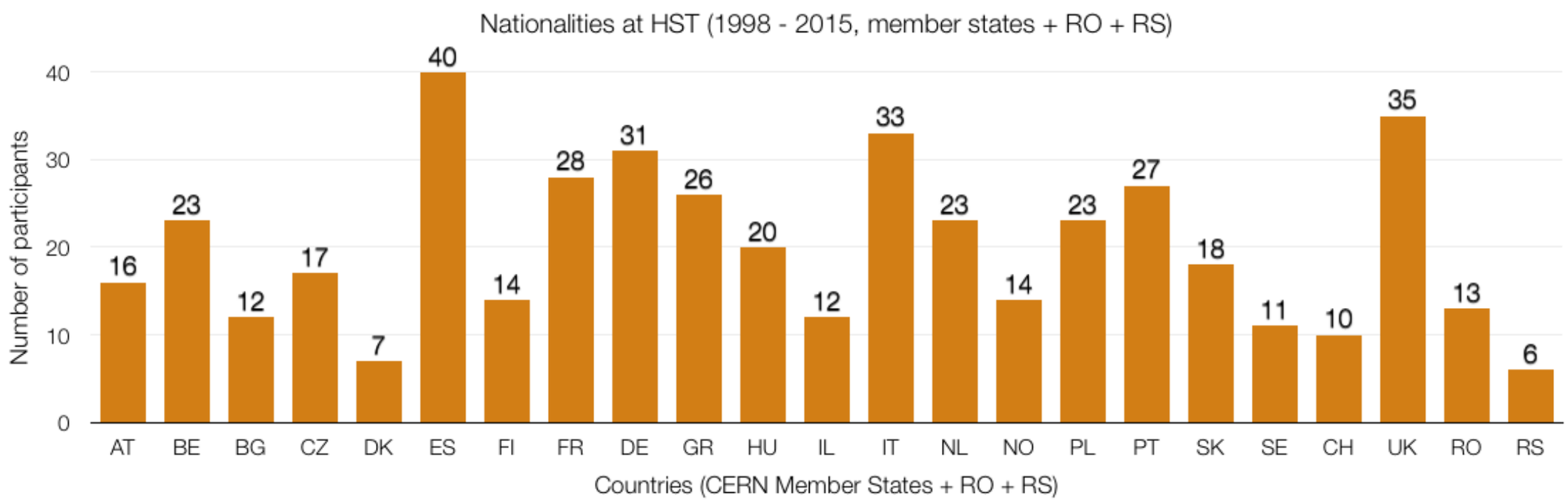
Australia	6	Chile	3	Ireland	7	Morocco	2	Slovenia	1
Brazil	2	China	2	Jordan	1	Nepal	1	South Africa	6
Burundi	2	Croatia	2	Kenya	4	Palestine (O.T.)	1	Swaziland	1
Cameroon	4	Dominican Rep.	4	Lebanon	1	Qatar	1	Thailand	10
Canada	5	Ecuador	2	Madagascar	2	Rwanda	11	T.F.Y.R.O.M.	1
		Estonia	5	Mexico	6	Saudi Arabia	1	Uganda	3
		Ghana	6	Mongolia	1	Singapore	2	U.A.E.	1
		Iran	3						

110

CERN's Teachers' Programmes - Stats 3







Outcome and To-Do-List

- newly inspired, motivated and confident teachers
- inspiring and motivating teachers

- Share your experience with your students!
- Share your experience with colleagues!
- Share your experience with the general public!

- Act as ambassador for science/engineering in general and particle physics in particular
- Organize follow-up activities
- Promote our programmes

Any questions?

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