CERN Teacher Programmes
Inspiring the next generation of scientists

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and
Visits Service
Objective of Teacher Programmes
To bring modern research closer to schools

OLD

Research  University  School Teacher  Students

NEW

Research  University  School Teacher  Students
Looking for multiplicative factors
Objectives of CERN Teacher Programmes

- Pass the message
  - Teachers are our partners and colleagues
- Recognise
  - Teachers hold the future in their hands
- Empower teachers
  - To update, expand and pass on their knowledge
- Facilitate
  - Learning
  - Networking
- Inspire and encourage
- Open and honest
- NOT TO tell teachers how to teach
- Learn from teachers

THANK
What are we trying to achieve with the help of physics teachers?

1: RAISE AND MAINTAIN THE INTEREST OF STUDENTS IN MODERN SCIENCE

Motivate them to continue scientific education at school
Help them to better understand the physical world

**Improve scientific literacy**

2: INSTIL A FEELING OF MYSTERY AND DISCOVERY POTENTIAL

Motivate students to study science/engineering at universities

**Prepare the future generation of scientists/engineers**

**SCIENCE IS ALIVE!**
How researchers view science
How school students view science

Science teaching climbing wall

1/2 mv²

What am I doing here?

m g h
Take students on a sight-seeing tour...

The origin of...

Universe
Black Holes
Dark Matter
Dark Energy
Antimatter
Particles

Link modern physics to school curriculum
Residential Teacher Programmes

Basic content

- Lectures
  - Introductions to CERN, Particle Physics, Cosmology, the LHC Experiments, Particle Accelerators, Medical Applications of Particle Physics, and the GRID

- Visits to experimental facilities
- Hands-on activities
- Working group activities
- Opportunities to meet working research physicists in a variety of informal settings.

All lectures are web archived and made publicly available
Outcome

- Newly inspired, motivated and confident teachers
- Inspire and motivate students
- Communicate with their colleagues
- Communicate with the general public
- Act as ambassadors for science/engineering, physics, particle physics, CERN
- Organise follow up activities
  - Visits, exhibitions, video conferences, projects
- Promote teacher programmes
- Help us to expand beyond the borders of CERN

Excellent examples among the many teachers who have attended our programmes
### Teacher Programme Participants 1998 - 2013

#### Member States
- Austria: 90
- Belgium: 110
- Bulgaria: 279
- Czech Republic: 146
- Denmark: 72
- Finland: 472
- France: 202
- Germany: 592
- Greece: 411
- Hungary: 348
- Italy: 190
- Netherlands: 86
- Norway: 80
- Poland: 544
- Portugal: 294
- Slovak republic: 221
- Spain: 309
- Sweden: 127
- Switzerland: 156
- United Kingdom: 1021

#### Observer States
- Angola: 4
- Australia: 5
- Azerbaijan: 1
- Brazil: 83
- Burundi: 1
- Cameroon: 3
- Canada: 3
- Cape Verde: 3
- Chile: 3
- China: 1
- Croatia: 1
- Cyprus: 8
- Dominican Republic: 2
- Ecuador: 2
- Estonia: 37
- Georgia: 55
- Ghana: 6
- Guinea Bissau: 1
- Iran: 1
- Ireland: 5
- Kazakhstan: 3
- Kenya: 4
- Kuwait: 1
- Lebanon: 1
- Madagascar: 2
- Malta: 36
- Mexico: 6
- Mongolia: 1
- Montenegro: 13
- Morocco: 2
- Mozambique: 17
- Namibia: 1
- Qatar: 1
- Rwanda: 17
- Sao Tome and Principe: 3
- Saudi Arabia: 1
- Singapore: 2
- Slovenia: 21
- South Africa: 6
- South Korea: 44

#### Candidate for Accession
- Romania: 12
- Russia: 163
- Turkey: 3
- USA: 65

#### Associate Member
- Israel: 7
- Serbia: 14

Total Participants: 5752

238

490
Arthur C. Clarke
Author of 2001 : A Space Odyssey

• “When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.”

• “The only way of discovering the limits of the possible is to venture a little way past them into the impossible.”

• “Any sufficiently advanced technology is indistinguishable from magic.”

Our goal, with the help of teachers, is to bring a little of the magic of CERN into the classroom