

# CERN and LHC

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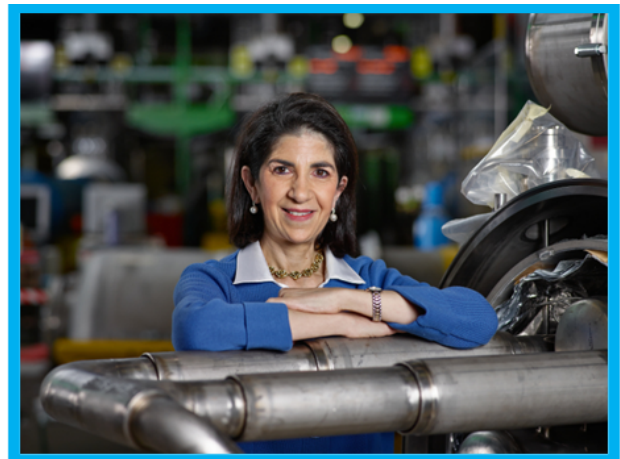
CERN is the most significant and largest laboratory in the world which deals with the physics of particles. It's located in the northeast of Switzerland, in the suburbs of Geneva.



**Fabiola Gianotti**

## HISTORY

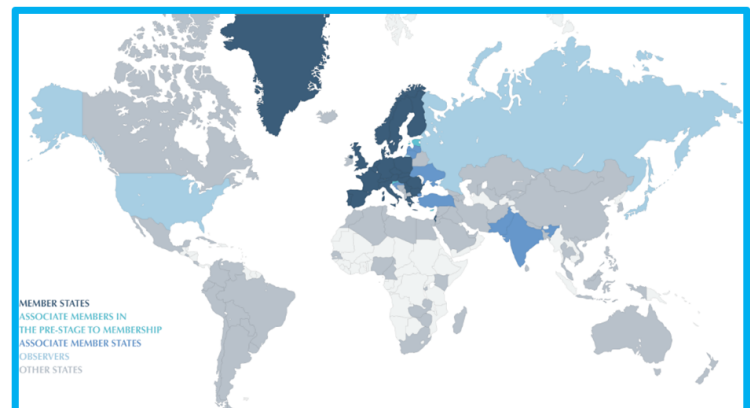
CERN or European Organization for Nuclear Research, was founded at the end of WW2. Scientists imagined creating a European nuclear and particle physics laboratory. With its almost 10 000 employees and scientists originating from 23 countries, it has evolved in 70 years time to one of the biggest and most important laboratories of the world.



Today the **main director** of the CERN is Fabiola Gianotti, a renowned **Italian scientist**, and researcher in the field of particle physics.

## Member states

CERN has **23 member states**, who contribute to the costs of CERN's programs. These member states are a part of the Council of the organization. There are also Associate Member States, some of which are in the pre-stage of becoming a member state. Some non-European states have an observer status, they have insight in certain experiments.



## Discoveries

**CERN has already made a lot of discoveries, some of these are:**

→ Neutral current



→ W and Z bosons

→ Identification of neutrinos

→ The Higgs Boson

## Touchscreen

The first touchscreen at CERN was made by Bent Stumpe. It was created because they needed it for the Super Proton Synchrotron, an important scientific machine.



## World Wide Web

The World Wide Web was created by Tim Berners-Lee. Later the first web server was developed together with Belgian scientist Robert Cailliau.

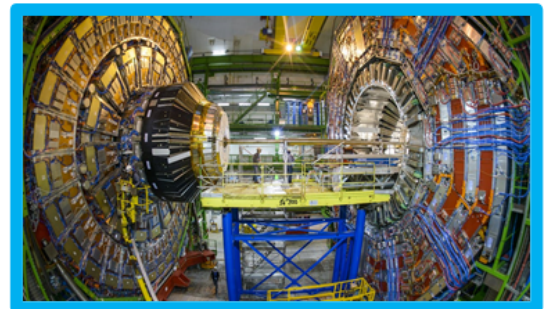


## Ongoing projects

**The LHC isn't the only machine CERN is experimenting with. Check out some of their ongoing projects listed below.**

### Smaller accelerators:

- The Super Proton Synchrotron directs a beam of accelerated particles on a fixed target
- The older Proton Synchrotron still houses two experiments on cosmic rays and quarks
- Next to accelerators and decelerators, CERN still uses telescopes and satellites



## LHC

The LHC is a 27-kilometres ring, in a tunnel under the ground.



### Working of the Large Hadron Collider

Particles are made to collide to extract information about matter's smallest components. Magnetic fields keep the particles moving at the speed of light.