Introduction for summer students

2016

CERNopenlab

CERN: A UNIQUE
ENVIRONMENT IN WHICH
TO PUSH TECHNOLOGIES
TO THEIR LIMITS

What is CERN?

European Organization for Nuclear Research

~ 2300 staff
~ 1050 other paid personnel
~ 11000 users
Budget ~1100 MCHF

Founded in 1954

Member States: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom
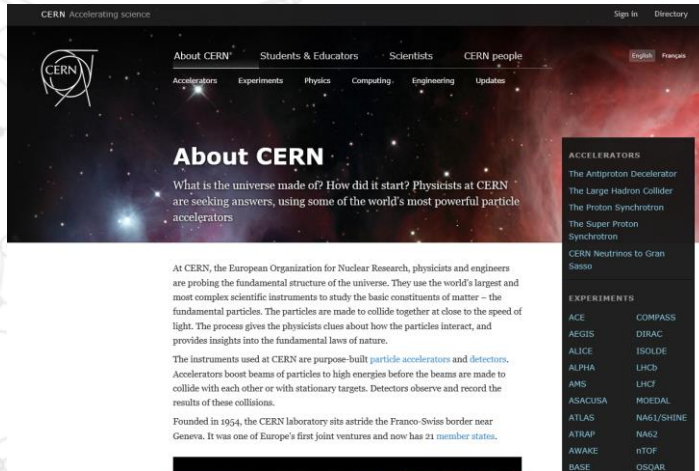
Candidate for accession: Romania

Associate Members in the Pre-Stage to Membership:, Cyprus, Serbia,

Associate Members: Pakistan, Turkey

Observers to Council: India, Japan, Russia, United States of America, the European Commission, Joint Institute for Nuclear Research and UNESCO

CERN Structure

http://home.cern

http://home.cern/about

Beams

Information Technology

Site Management and Buildings

Human Resources

Engineering

Theoretical physics

Technology

Site Management and Buildings

Experimental physics

Industry, Procurement and Knowledge Transfer

IT Department

http://information-technology.web.cern.ch/

IT Department Structure
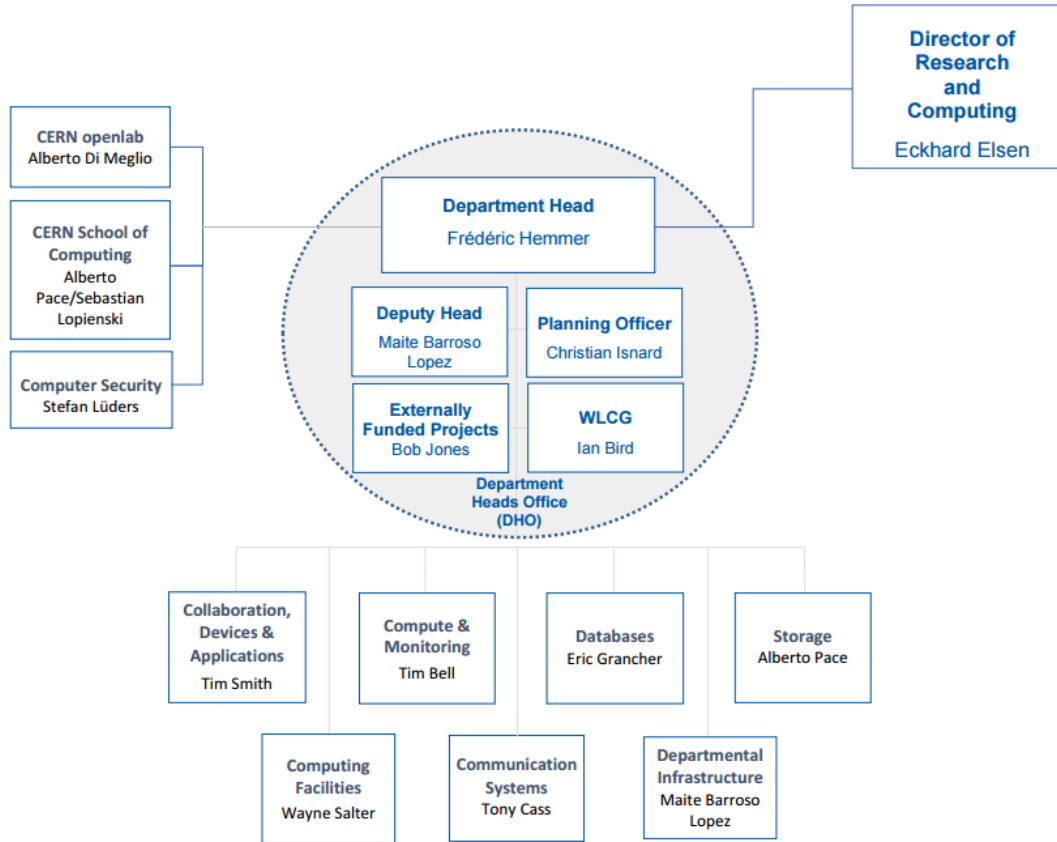
CERN openlab in a nutshell

A science – industry partnership to drive R&D and innovation with over a decade of success

- **Evaluate** state-of-the-art technologies in a challenging environment and improve them

- **Test** in a research environment today what will be used in many business sectors tomorrow

- **Train** next generation of engineers/employees

- **Disseminate** results and outreach to new audiences

Joint Research

CERNopenlab

Education

Communication

Partners	intel · ORACLE · SIEMENS
Contributors	CISCO · rackspace the open cloud company · SEAGATE · BROCADE · IDT
Associates	ComTrade · HUAWEI · Yandex
Research	INNOPOLIS UNIVERSITY · Kazan Federal University · Newcastle University · GSI · EMBL-EBI
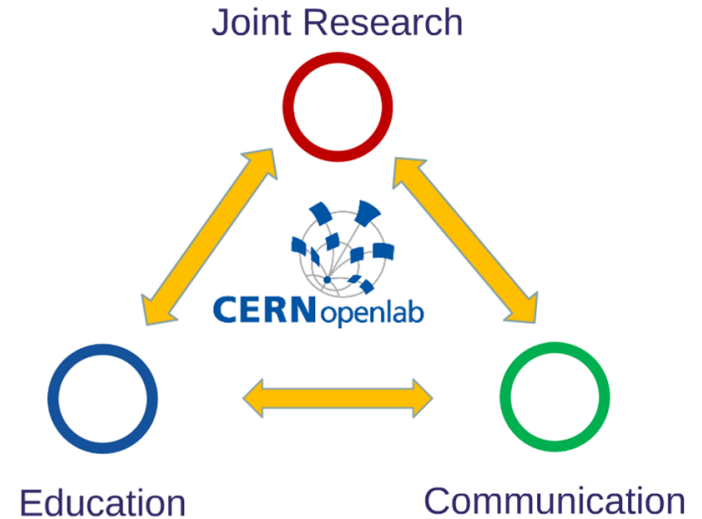
Engagement of multi-disciplinary

CERN EXPERTS collaborating on joint projects

Association with the

WORLD'S LEADING INNOVATORS in the IT industry

DISSEMINATION OF RESULTS

as success stories to a wide range of audiences

CERN openlab Phase V

Recruitment channel for **HIGHLY SKILLED**

AND TRAINED young IT specialists

On-site **VISITS**

15 Years of Successful Collaboration

Set-up 2001

I 2003

II 2006

III 2009

IV 2012

V 2015

15 Years Anniversary 2016
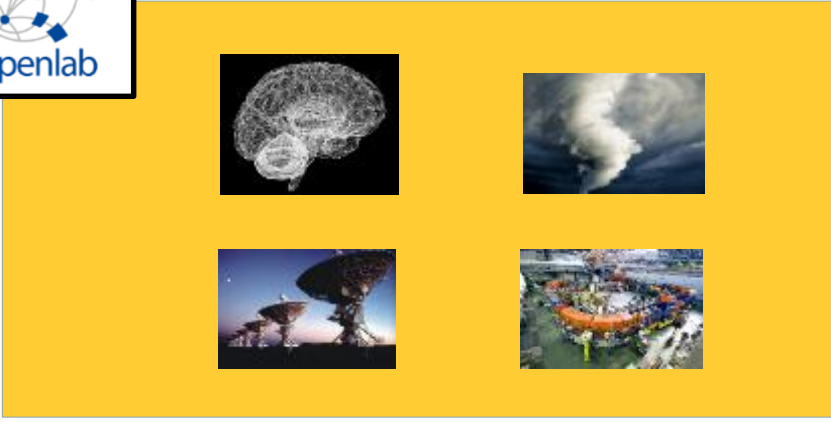
CERN openlab Collaboration Board 2016

The community

How do we manage it?

Collaboration Board (all members represented) → Mgmt team (Head, CTO, Comms, Admin)

CERN Partner Contacts → Mgmt team (Head, CTO, Comms, Admin)

CERN/IT Mgmt. (DHO, IT-EC Project Office, etc.), Legal, KT → Mgmt team (Head, CTO, Comms, Admin)

Project 1 (Project leader)

Project 2 (Project leader)

Project N (Project leader)
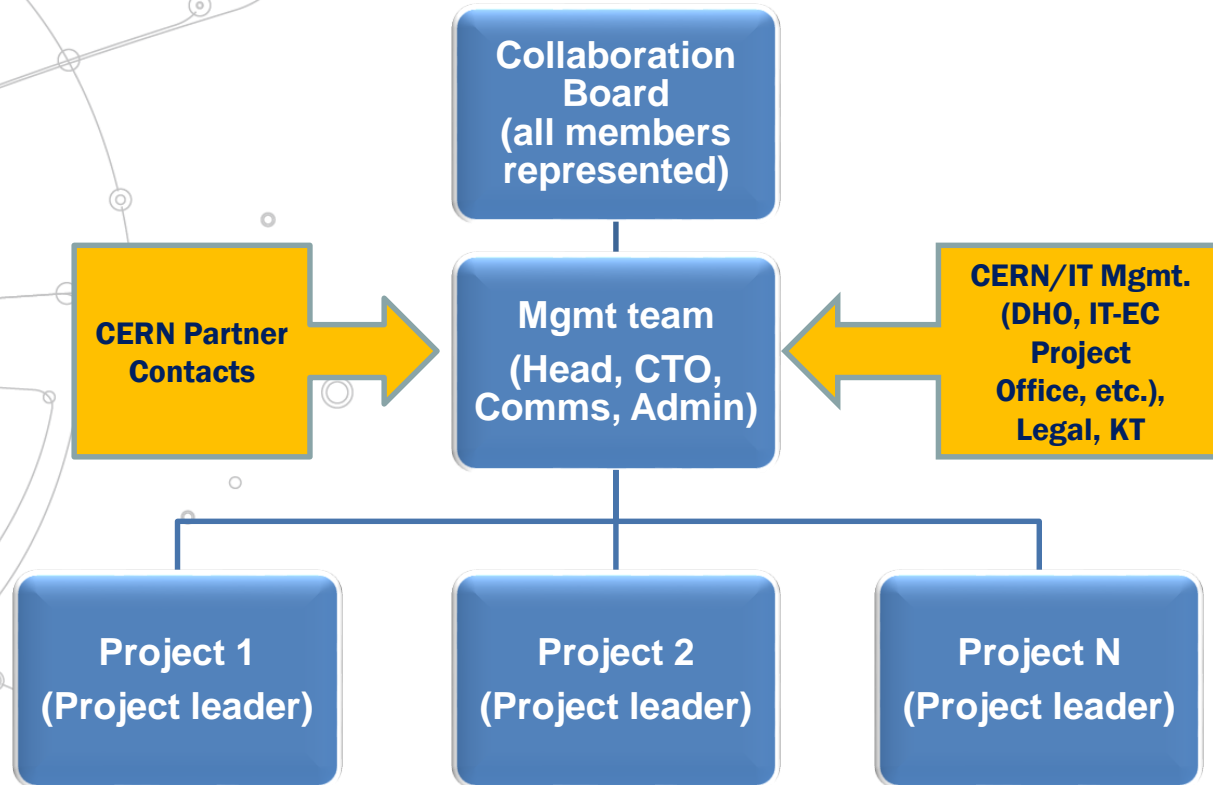
The Team

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Admin/Finance Officer

Fons Rademakers
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Junior Admin Officer

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Junior Communication
Officer

Melissa Gaillard
IT Department
Communication Officer

Alberto Di Meglio
CERN openlab
Head

Andrew Purcell
CERN openlab
Communication Officer

The Technical Programme

Data acquisition and filtering
Collecting data

Networks and connectivity
Connecting resources

Data storage architectures
Storing and serving data

Compute management and provisioning (cloud)
Managing resources for processing

Computing platforms, data analysis, simulation
Improving processing and code efficiency

Data analytics/Machine Learning
**Extracting information**

Medical applications

The Educational Programme

CERNopenlab
education

Most of the dedicated personnel in CERN openlab
are young, talented Fellows receiving
hands-on experience on new technologies

A comprehensive offer of general and specific
workshops, training events and initiatives

Experts from industry and laboratories give lectures
at events inside and outside CERN

Summer Student Programme
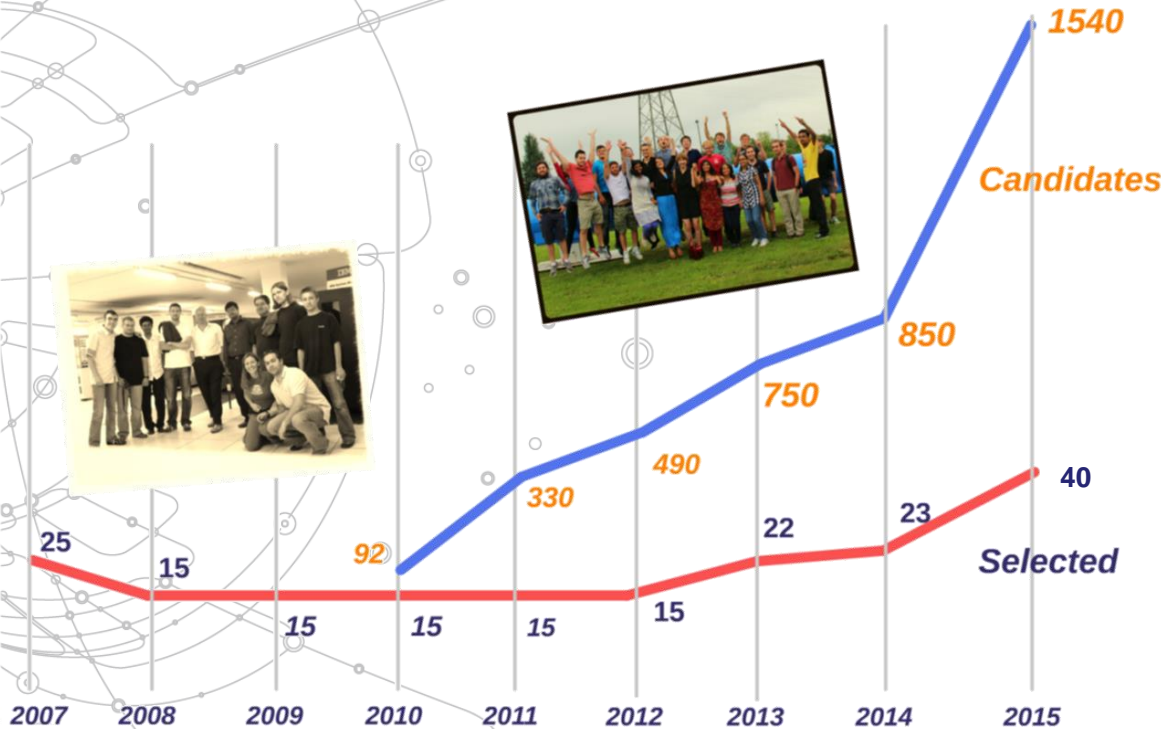
In 2016

- ~1500 applicants
- 39 selected students
- Lecture series
- Visits to external labs/companies
- Lightning talks session

Candidates: 1540, 850, 750, 490, 330, 92

Selected: 40, 23, 22, 15, 15, 15, 15, 25

2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Your CERN Experience

- 9 weeks
- A project to complete
- A report to be submitted
  - Template provided (http://openlab.web.cern.ch/templates)
  - Initial draft after 4 weeks (table of content, main sections)
  - Final draft to your supervisor a week before leaving
- A 5-minute 'lightning talk' to describe your project and its outcome
- Visits to external companies and research institutes
- A series of lectures about IT, computing and data management applied to HEP and other scientific domains
  - http://indico.cern.ch/category/8040/

Confidentiality agreement

- Some of you will be carrying out work that is confidential.

- You may be working with technologies from industrial partners that is still under a non-disclosure agreement (NDA).

Summer student guide

http://indico.cern.ch/event/537114/overview
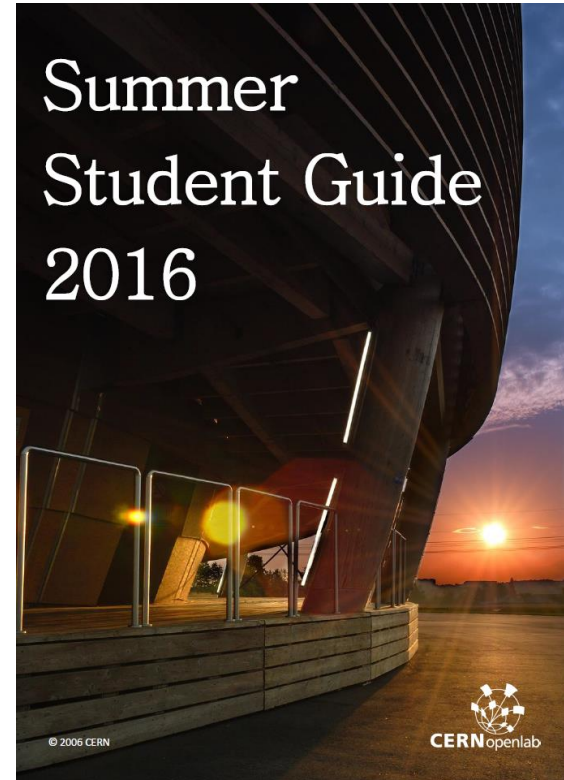
Connect with us – and each other!

http://cern.ch/go/lw7v

http://cern.ch/go/9s9L

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