Removing barriers to science

examples from particle physics

Jens Vigen (CERN), **WSIS Forum**, Geneva, 19th May 2011

CERN: European Organization for Nuclear Research (since 1954)

- The world leading HEP laboratory, Geneva (CH)
- 2500 staff (mostly engineers, administrators/services)
- 10 000 users (physicists from 580 institutes in 85 countries)
- 3 Nobel prizes (Accelerators, Detectors, Discoveries)




- Invented the web
- The home of the LHC machine
- Director General strong advocate of Open Access
- Runs a 1-million objects Digital Library

CERN Convention (1953): *ante-litteram* Open Access manifesto

"… the results of its experimental and theoretical work shall be published or otherwise made generally available"

LHC physics is all Open Access

CERN publishing policies

- Official mandate for deposit in place “since ever”
  - Currently CERN Operational Circular No. 6 (2001)
  - Further stressed by various additional policy documents
- Practically speaking; HEP has full green OA coverage
- Recent policy for publishing of experimental physics
  - Open Access
  - No transfer of copyright
  - CC-BY-3.0 license

A strong request from the scientists

"We strongly encourage the usage of electronic publishing methods for our publications and support the principles of Open Access Publishing, which includes granting free access of our publications to all. Furthermore, we encourage all our members to publish papers in easily accessible journals, following the principles of the Open Access Paradigm."

4 experimental groups
7000 scientists
from 54 countries

ATLAS; approved on 23rd February 2007
CMS; approved on 2nd March 2007
ALICE; approved on 9th March 2007
LHCb; approved on 12th March 2007

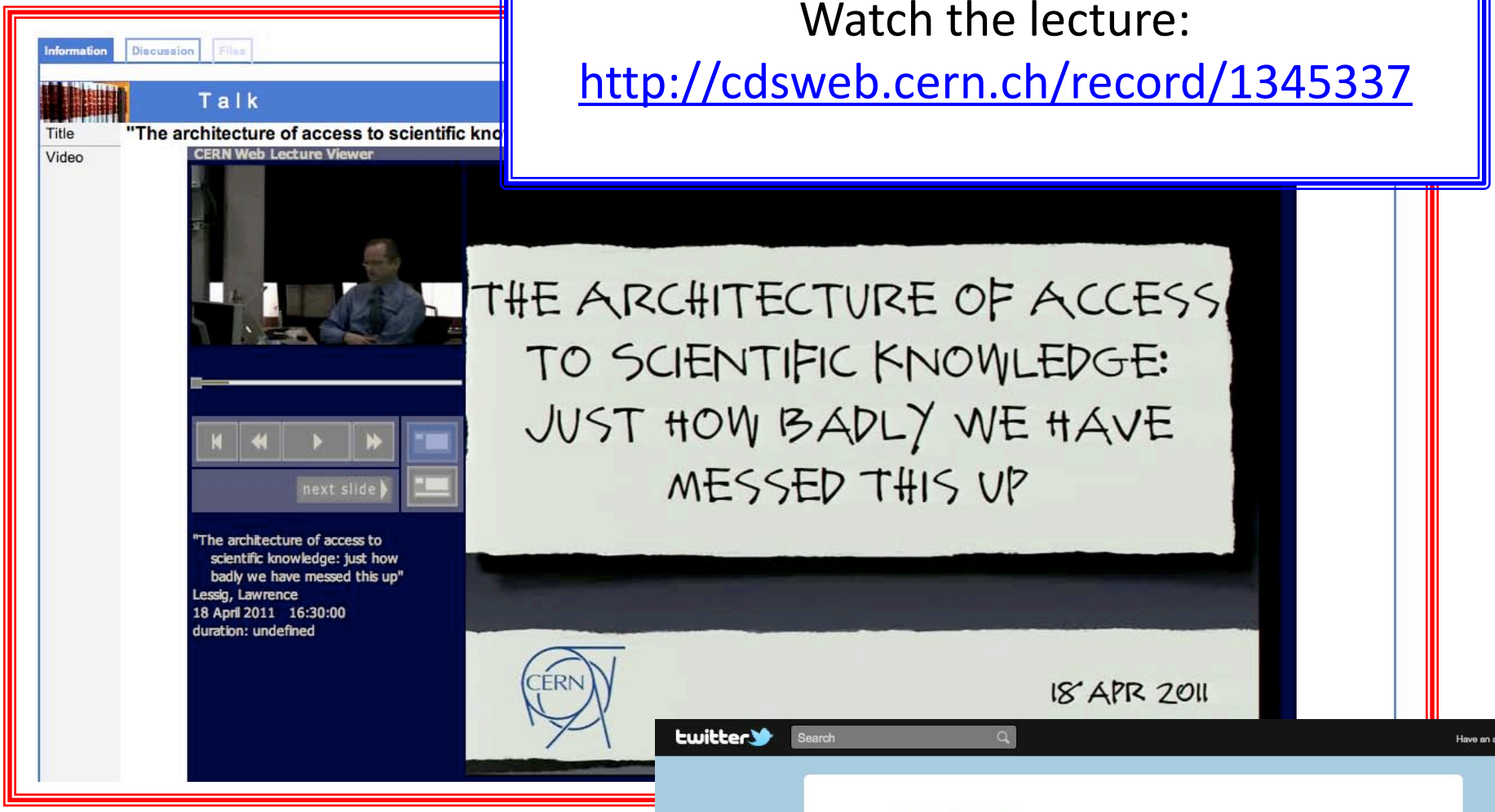
Open Access
an opportunity for the crowds

- The print era had its natural limitations
- There is no reason to carry any of these limitations forward to the online era
- Today any scientist should have the possibility to read, textmine, remix material and publish without being confronted with any financial or legal barriers

Prof. Lawrence Lessig, Harvard Univ.:

"CERN has taken the lead in supporting Open Access"

Watch the lecture:
http://cdsweb.cern.ch/record/1345337



Open Access is not equal to e-Science

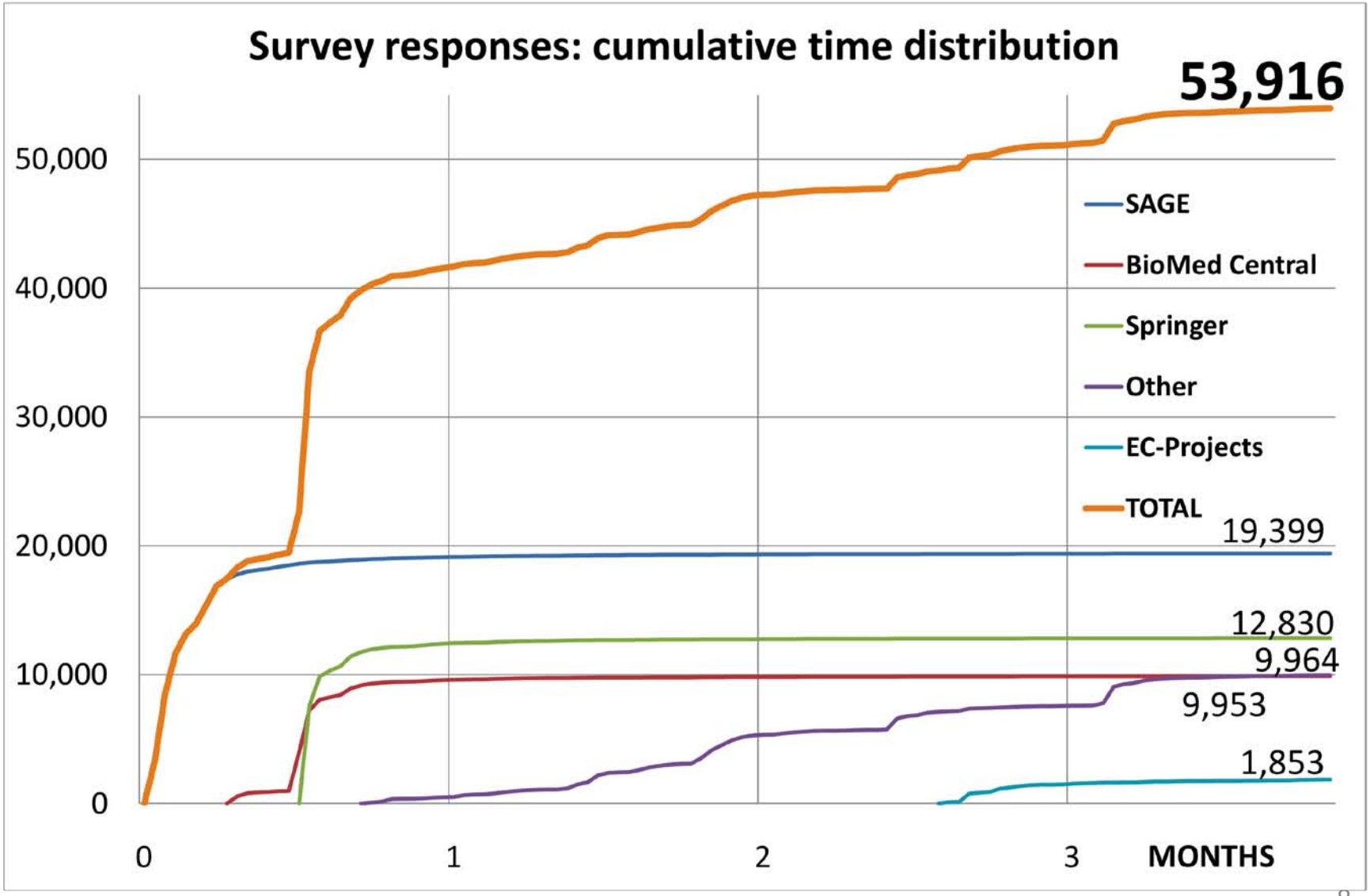
BUT

e-Science will require

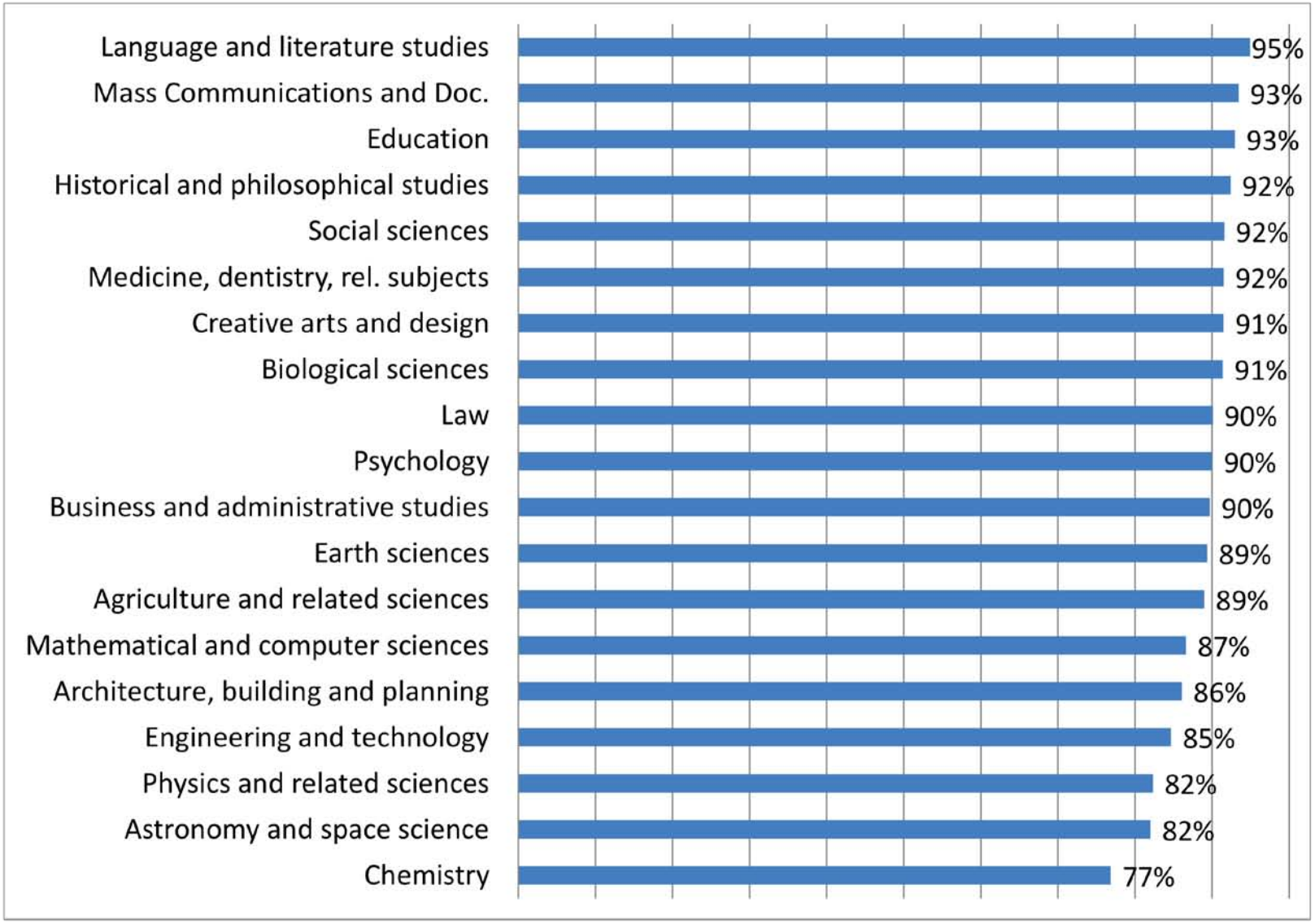
Open Access!

The SOAP survey

Study on Open Access Publishing



Would OA journals be beneficial for your field?



Yes

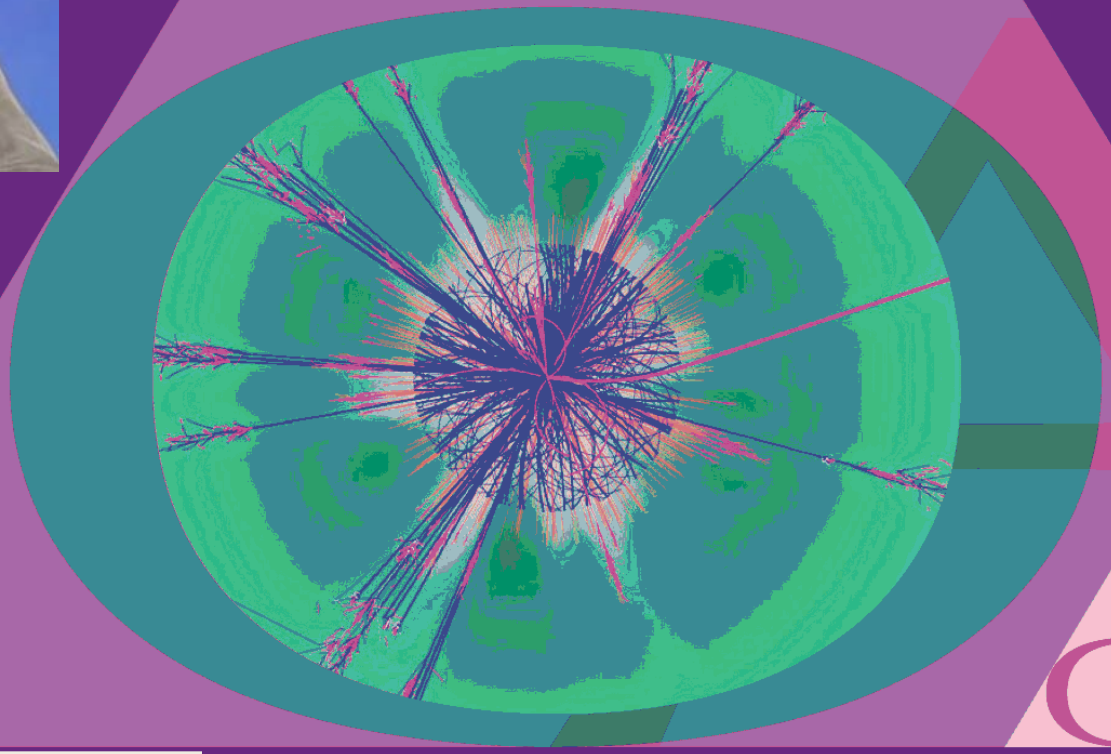
Preliminary

Nelly Kroes, Vice-President of the European Commission:

"SCOAP is key"

SCOAP^3 :

- Converting all journals to Open Access
- Ensure a sustainable publishing model



http://tinyurl.com/Kroes-SCOAP3

Data : access and preservation

Study Group for Data Preservation and
Long Term Analysis in High Energy Physics

Home | People | Committees | Subgroups | Workshops | Documents | Work Space | Press

DPHEP

ICFA Study Group on Data Preservation and Long Term Analysis in High Energy Physics

High Energy Physics experiments initiate with this **Study Group** a common reflection on **data persistency and long term analysis** in order to get a common vision on these issues and create a multi-experiment dynamics for further reference.

The objectives of the Study Group are:

- Review and document the physics objectives of the data persistency in HEP.
- Exchange information concerning the analysis model: abstraction, software, documentation etc. and identify coherence points.
- Address the harware and software persistency status.
- Review possible fundings programs and other related international initiatives.
- Converge to a common set of specifications in a document that will constitute the basis for future collaborations.

Since August 2009, the Study Group is endorsed by ICFA (International Committee for Future Accelerators).

A series of workshops have been held by the Study Group, access to which can be found using the links below. The 3rd workshop was preceded by a public **symposium**, which included an address by the CERN Director General, Prof. Rolf Heuer, who underlined the importance of data preservation for the scientific research in high-energy physics in stating that "Preserved data can improve the scientific return of the investment."

http://www.dphep.org/

Libraries and open access are the keys to knowledge

In a scenario with no barriers, to access and disseminate peer-reviewed scientific results; only then, we could take the full advantage of the scientific talents across the world.

The hinders are to be overcome!