



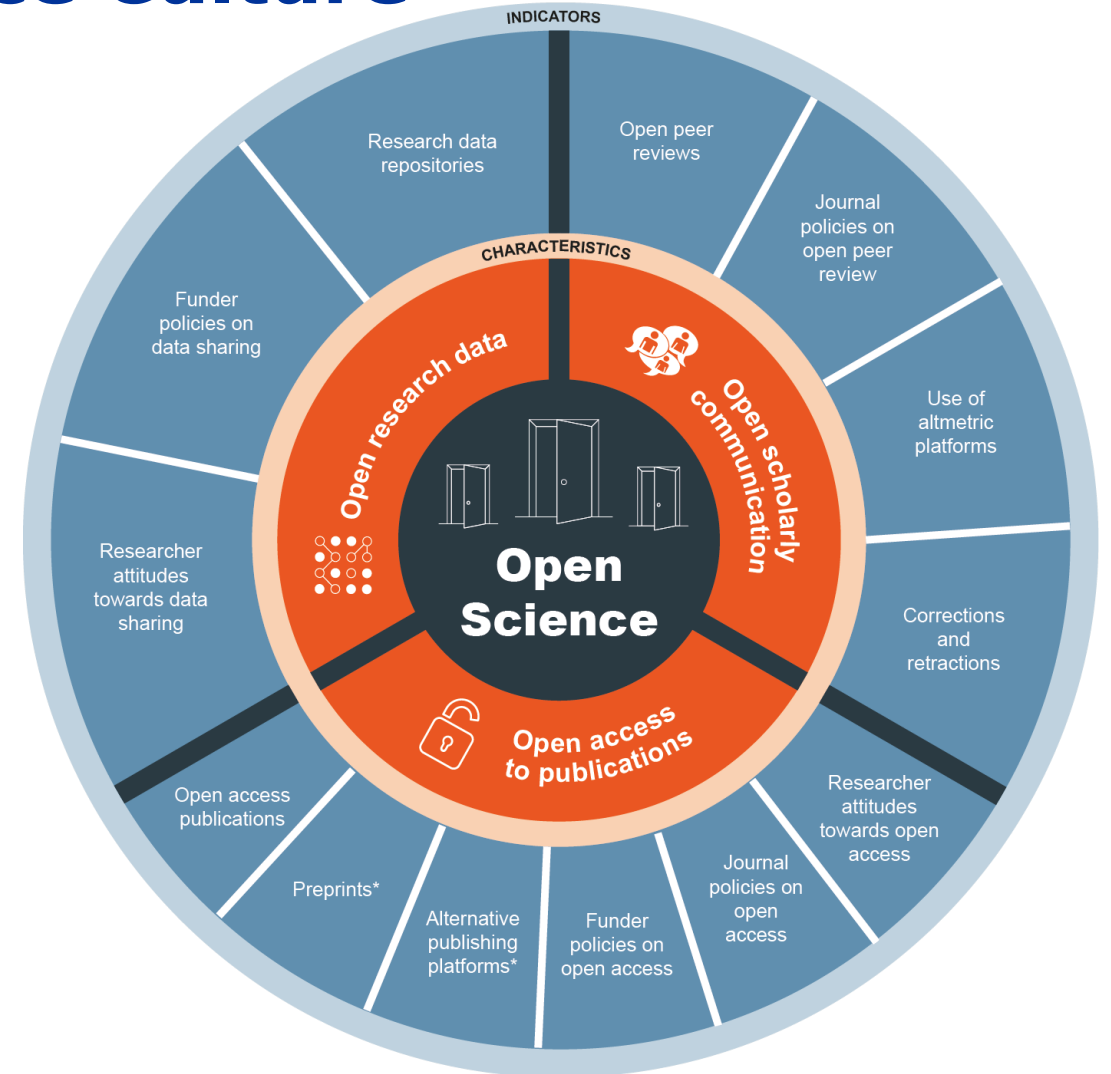
Open Science and Open Data

Matthias Egger, President of the National Research Council
5th National Gathering of the Swiss Medical Librarians
Bern, 31 August 2017

Open Science and Science Culture

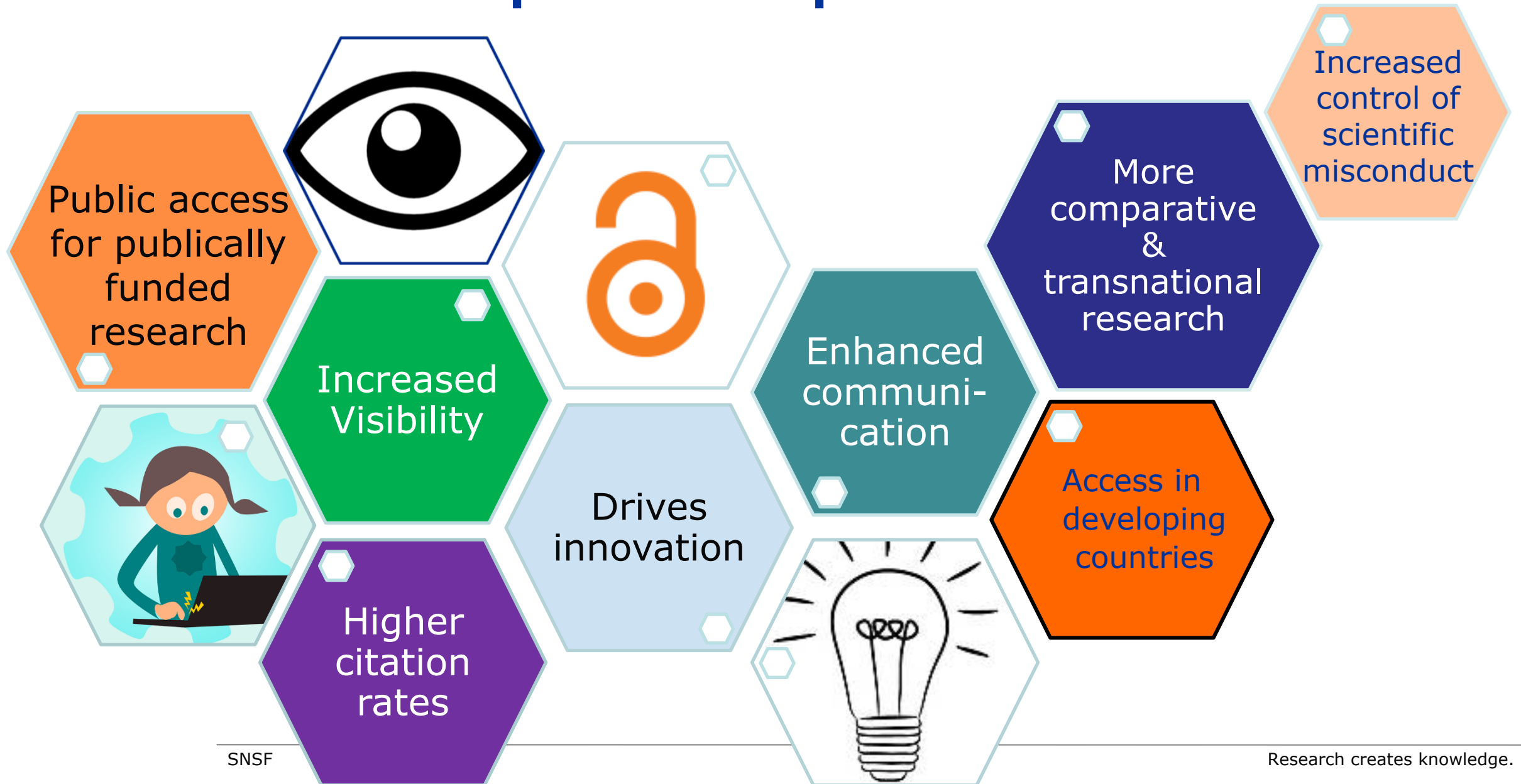
«**Open science** is about **the way researchers work, collaborate, interact, share** resources and disseminate results. A systemic change towards open science is driven by new technologies and data, the increasing demand in society to address the societal challenges of our times and the readiness of citizens to participate in research. »

Amsterdam Call for Action, p. 4.



EU Open Science Monitor

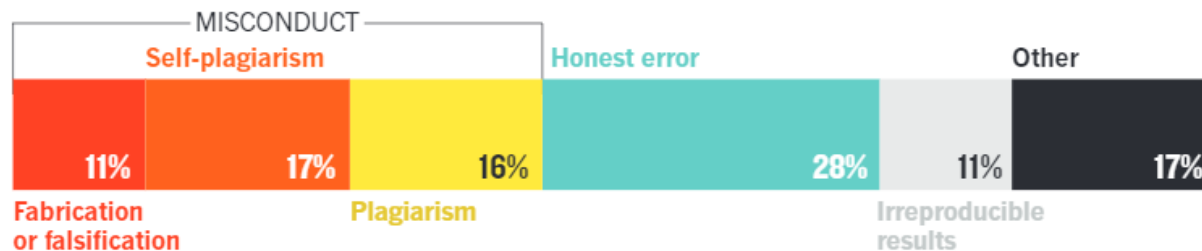
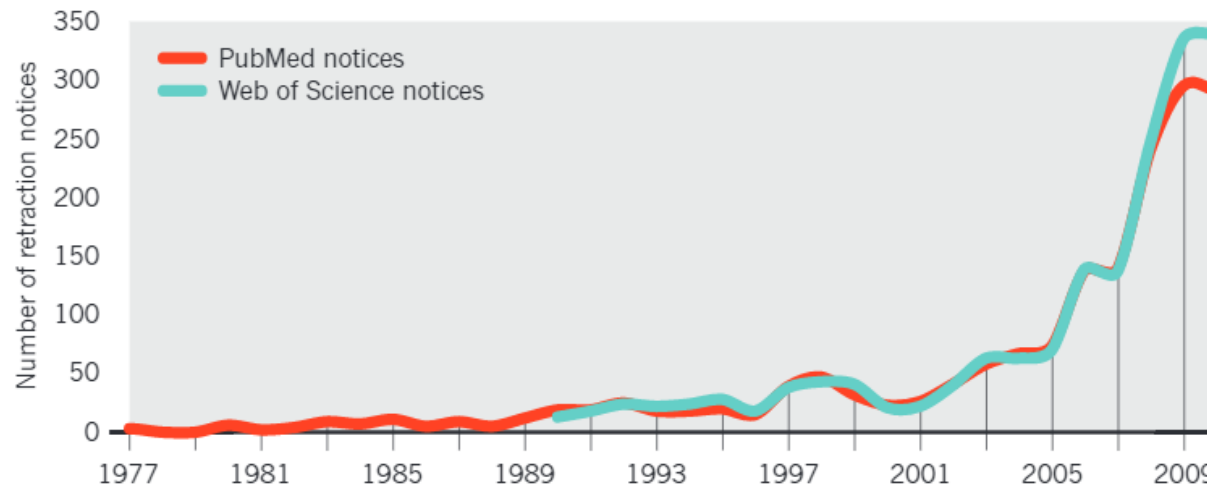
Greater Impact with Open Science



Open Science and Reproducibility

RISE OF THE RETRACTIONS

In the past decade, the number of retraction notices has shot up 10-fold (**top**), even as the literature has expanded by only 44%. It is likely that only about half of all retractions are for researcher misconduct (**middle**). Higher-impact journals have logged more retraction notices over the past decade, but much of the increase during 2006–10 came from lower-impact journals (**bottom**).



Open Science as a Research Accelerator

commentary

Open science is a research accelerator

Michael Woelfle, Piero Olliaro and Matthew H. Todd*

An open-source approach to the problem of producing an off-patent drug in enantiopure form serves as an example of how academic and industrial researchers can join forces to make new scientific discoveries that could have a huge impact on human health.

When we are faced with a challenging scientific problem we cannot solve, what do we do? Many of us would go to see our colleagues and ask for their advice. Our professional network is valuable. It is also limited. Perhaps there are people who are well-placed to help us, in another university or company, in a different country, but we unfortunately do not know them. Surely science would proceed faster if we could reach those people? Or, better, if they could find us?

This Commentary describes a case study

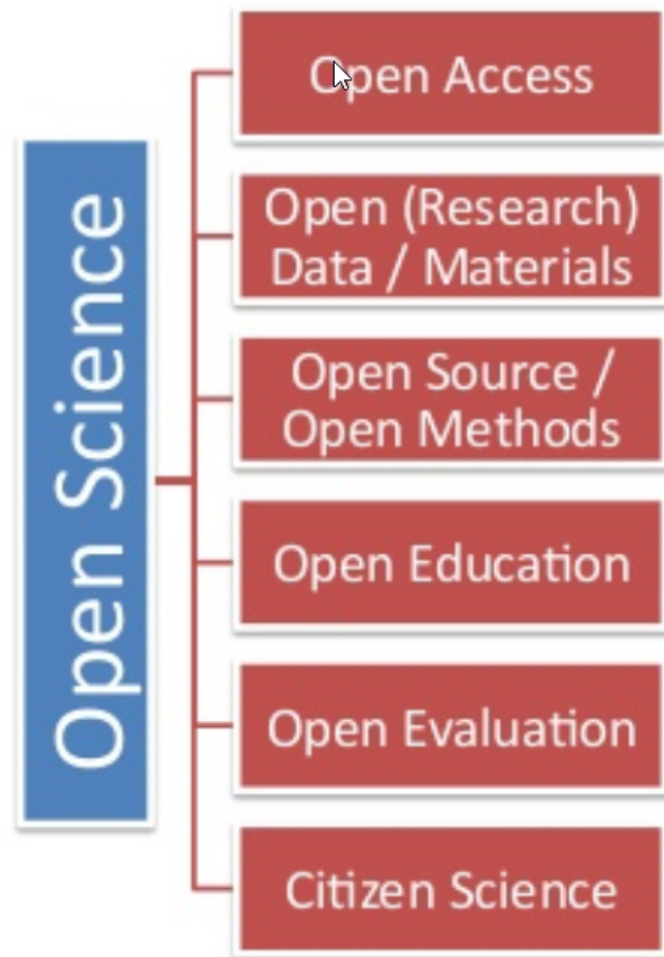


TE/SCIENCE PHOTO LIBRARY

Schistosomiasis Control Initiative⁴. As it is off-patent, this demand has driven down the price of the active pharmaceutical ingredient to approximately 10 US cents per gram and that of a 600 mg tablet to 8–14 US cents. The compound is made as a racemate, even though the inactive enantiomer has side effects and is responsible for a bitter taste⁵. A pill consisting of just the active enantiomer would not be bitter (hence more likely to be taken, especially by children), would be smaller (easier to ship and swallow) and generate fewer side effects. The World Health

SNSF

Open Science in an Open Society?



Citizen science is a partnership between professional researchers and volunteers in which the volunteers implement tasks which have traditionally been implemented by scientists” (GAIA 26/1(2017): 22–26)

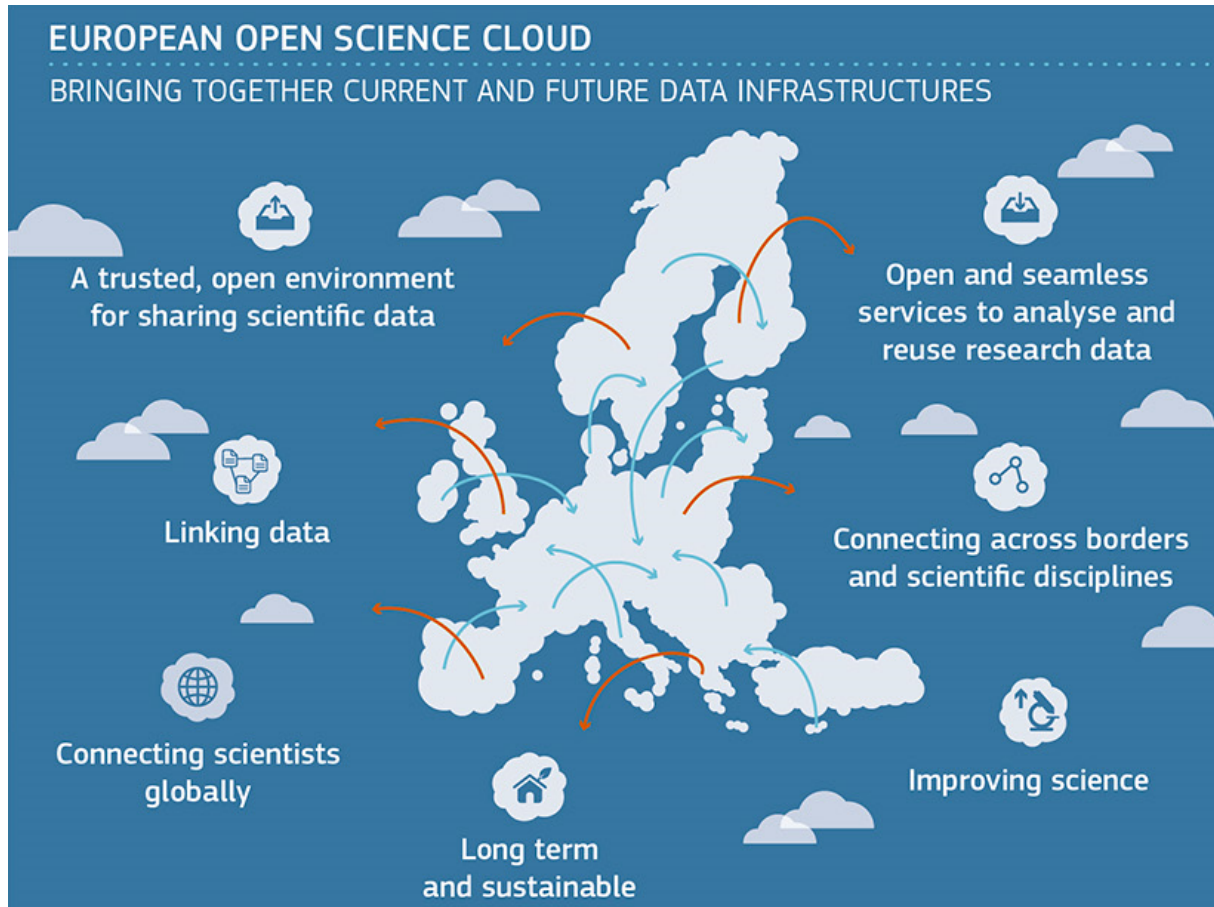


Recommendations by LERU (citizen science for funding organisations)



- Recognise and encourage a **wide range of success criteria** when supporting projects including but not limiting to traditional measures of scientific quality
- When evaluating citizen science projects , ensure **adequate funding for community management , platform development and other non-research functions characteristics**
- Promote the use of open science practices by requiring **open access to publication, open data standards, and the use of open source software**
- Set clear **legal and ethical criteria** for data privacy according to existing laws, such as the control of personal data

Building the European Open Science Cloud 2020



Open Science Prize

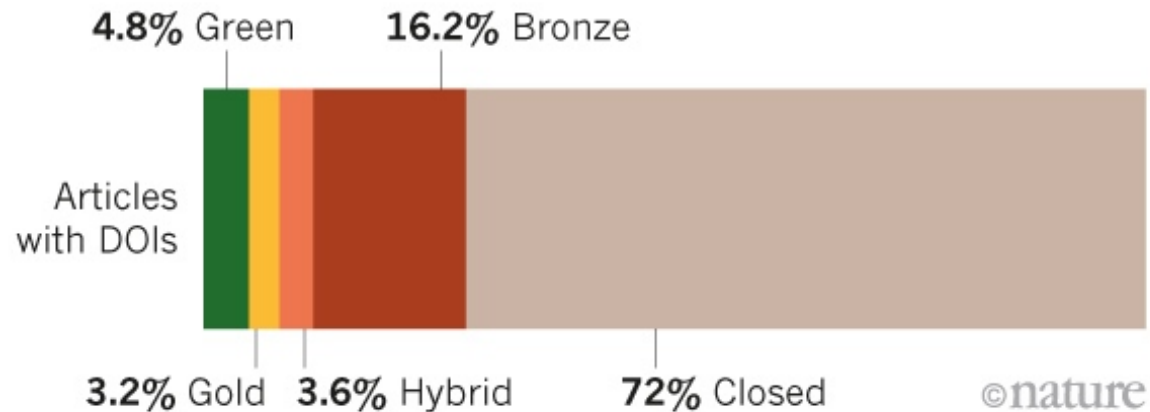


Real-Time Evolutionary Tracking for Pathogen
Surveillance and Epidemiological Investigation

- **Nextstrain.org**
- Uses publicly available viral genomic data to create online visual platform showing real-time molecular epidemiology and evolutionary analysis of emerging epidemics

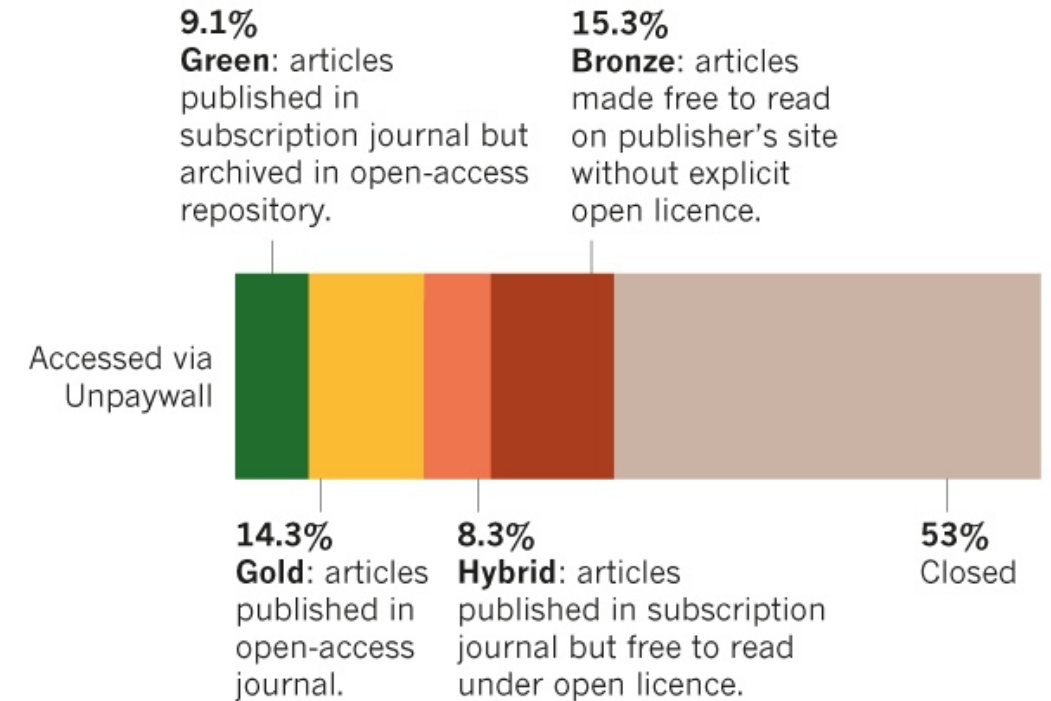
The State of Open Access

In the scholarly literature as a whole — approximated as the 67 million journal articles with DOIs — 28% are free to read online.



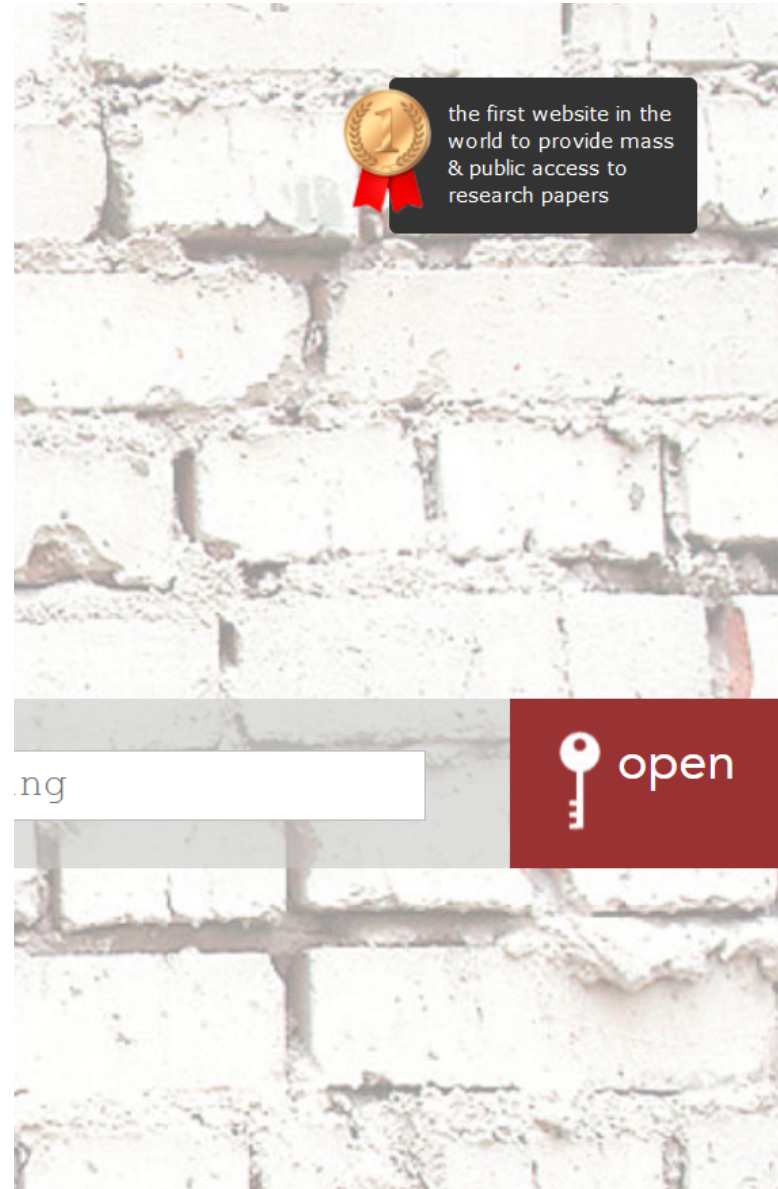
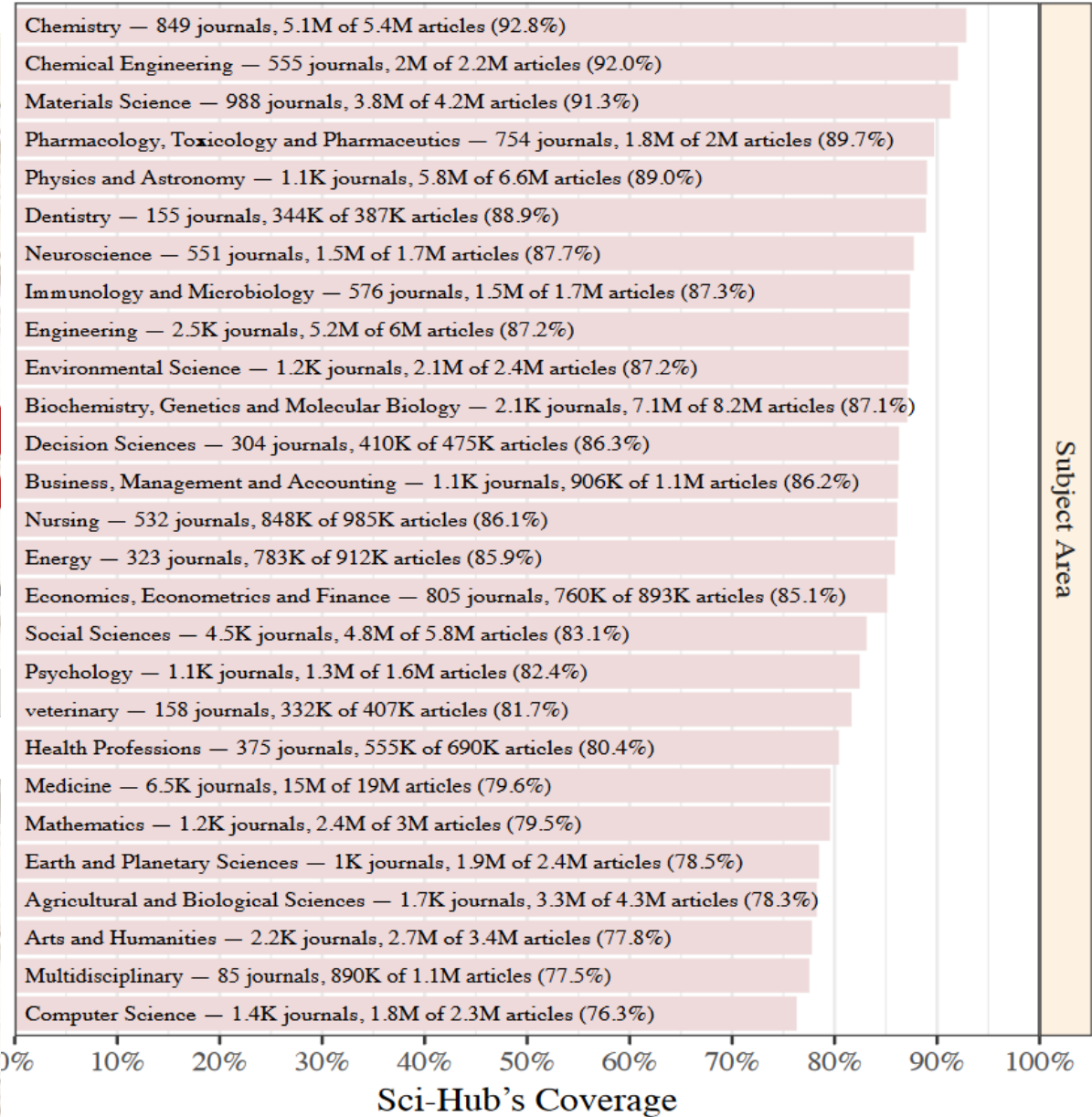
- 28% of all 67 mio journal articles free to read online

Nearly half of scholarly articles that researchers are trying to access using the browser extension Unpaywall are freely readable somewhere on the web, finds an analysis. Around half were published in the past two years.



- Ca. 50% accessed articles via Unpaywall free to read online
- Ca. 50% published in the past 2 years

Singh Chawla - Nature 2017 [doi:10.1038/nature.2017.22418](https://doi.org/10.1038/nature.2017.22418)



Green OA - Bsp. Universität Basel (edoc)

edoc



Home Policies About Statistics Contact

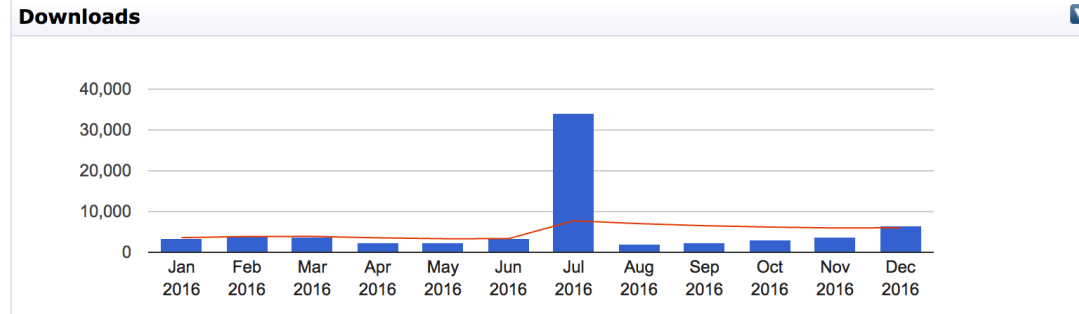
Login Quick Search

Statistics

All items > Item type: Article

Jan 1, 2016 - Dec 31, 2016

Filter Items Dates Available Reports



Activity Overview

	2,047 Items		72,424 Downloads
	327,221 Hits		28% Full text
	22% Open access		

http://edoc.unibas.ch/cgi/stats/report/type/article/?range=2016&view_range=View

Green OA - Bsp. Universität Bern (BORIS)

BORIS
Bern Open Repository and Information System

Home Statistics

u^b
UNIVERSITÄT
BERN

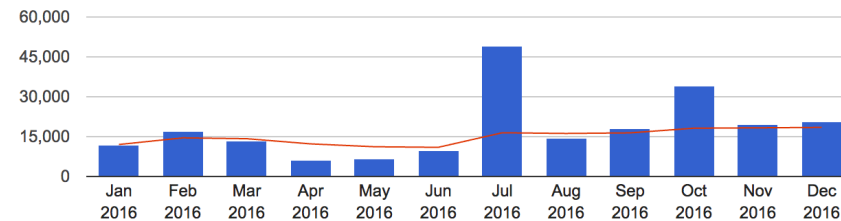
Statistics

All items > Item type: Journal Article

Jan 1, 2016 - Dec 31, 2016

Filter Items Dates Available Reports

Downloads



Activity Overview



6,615 Items



221,818 Downloads



84% Full text



30% Open access



412 Request a Copy



739,333 Hits

http://boris.unibe.ch/cgi/stats/report/type/article/?range=2016&view_range=View

Green OA - Bsp. Universität Zürich (ZORA)

All items > Item type: Journal Article

Jan 1, 2016 - Dec 31, 2016 < All

Available Reports

[Summary](#) [Citations](#) [Deposits](#) [Requests](#) [Journals/Series/Publishers](#)

Filter Items

Creators

e.g. Smith, John

Please enter some text to filter by
(at least 2 characters)

Dates

Select dates:

Start Date: YYYY/MM/DD



End Date: YYYY/MM/DD



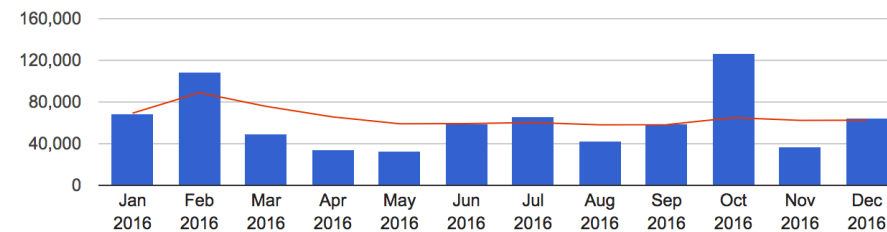
View

-OR- select a range:

Past month

View

Downloads



Key Figures



6,750 Items



752,003 Downloads



70% Full text



43% Open access

http://www.zora.uzh.ch/cgi/stats/report/type/article/?range=2016&view_range=View

Green OA – Umfrage ETHZ Feb. 2017

- 74% der 992 befragten ETHZ-WissenschaftlerInnen kennen die bereits 2008 eingeführte [verpflichtende Open Access Policy](#) der ETHZ NICHT.
- 24% haben noch nie vom Repository der ETH gehört.



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

<https://doi.org/10.3929/ethz-b-000177012>



The Netherlands - Monitoring Report 2011

„Key observations as regards Open Access:

The percentage of publications made available annually via the repositories on an Open Access (OA) basis [..] **has not increased significantly** since 2007;

in 2010, it fluctuated between 7% and 30% at virtually all institutions.“

https://www.surf.nl/binaries/content/assets/surf/en/knowledgebase/2012/Monitor2011_strategicsynopsis_ENGdef.pdf

United Kingdom

- 2012: Working Group on Expanding Access to Published Research Findings
- -> **Finch Report**
- Debate in the „[Business, Innovation and Skills Committee](#)“ (House of Commons)
- Consequence: £10Mio additional funding for OA (including Hybrid OA)



Professor Dame Janet Finch

<https://www.acu.ac.uk/research-information-network/finch-report-final>

The Netherlands



Government of the Netherlands

Government > Members of Cabinet > Sander Dekker > Documents >

Open Access to publications

During the general parliamentary consultations on Science Policy of 18 April 2013, I promised to explain my ideas about the practice of providing open access to research publications and how that practice will continue to evolve. The principle of open access involves offering readers worldwide access to research publications, journals and books free of charge. My contention is that access to the results of publicly and publicly-privately funded research should always be unrestricted. Because such



Sander Dekker
State Secretary of the Ministry of
Education, Culture and Science

<https://www.government.nl/government/members-of-cabinet/sander-dekker/documents/parliamentary-documents/2014/01/21/open-access-to-publications>

My preference is “golden” open access; in other words, publication in journals that make research articles available online free of charge. My aim is for the Netherlands to have switched entirely to the golden road to open access within ten years, in other words by 2024. In order to achieve this, at least 60 per cent of all articles will have to be available in open access journals in five years’ time.

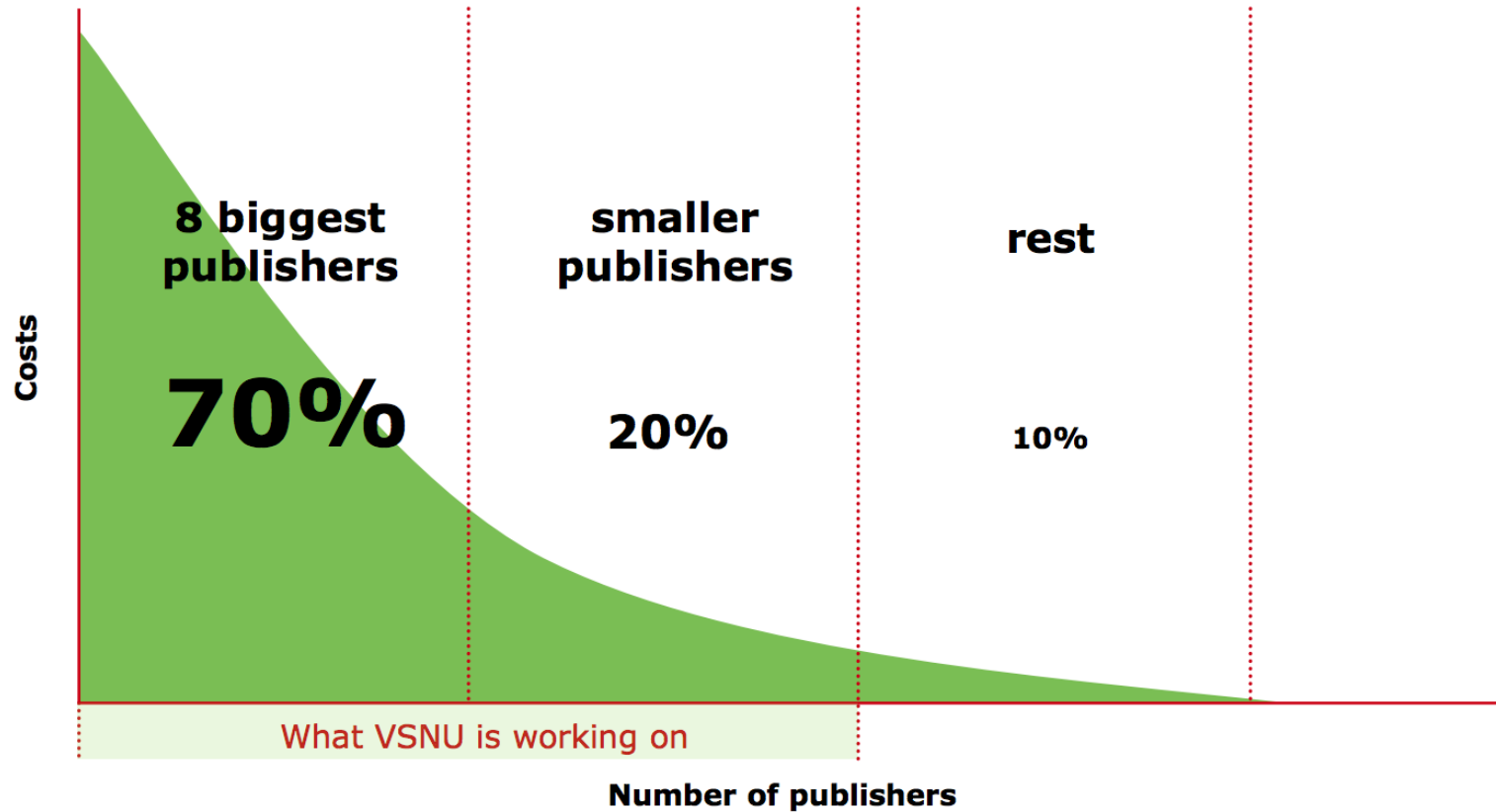
If the relevant parties do not do enough, or progress is unacceptably slow, the Minister and I will recommend making open access publication mandatory in 2016 under the Higher Education and Research Act (Wet op het hoger onderwijs en wetenschappelijk onderzoek, WHW).



Sander Dekker
State Secretary of the Ministry of
Education, Culture and Science

NL

8 biggest publishers cover 70% of the market



<http://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/Open%20access/VSNUNL%20OA%20presentation.pdf>

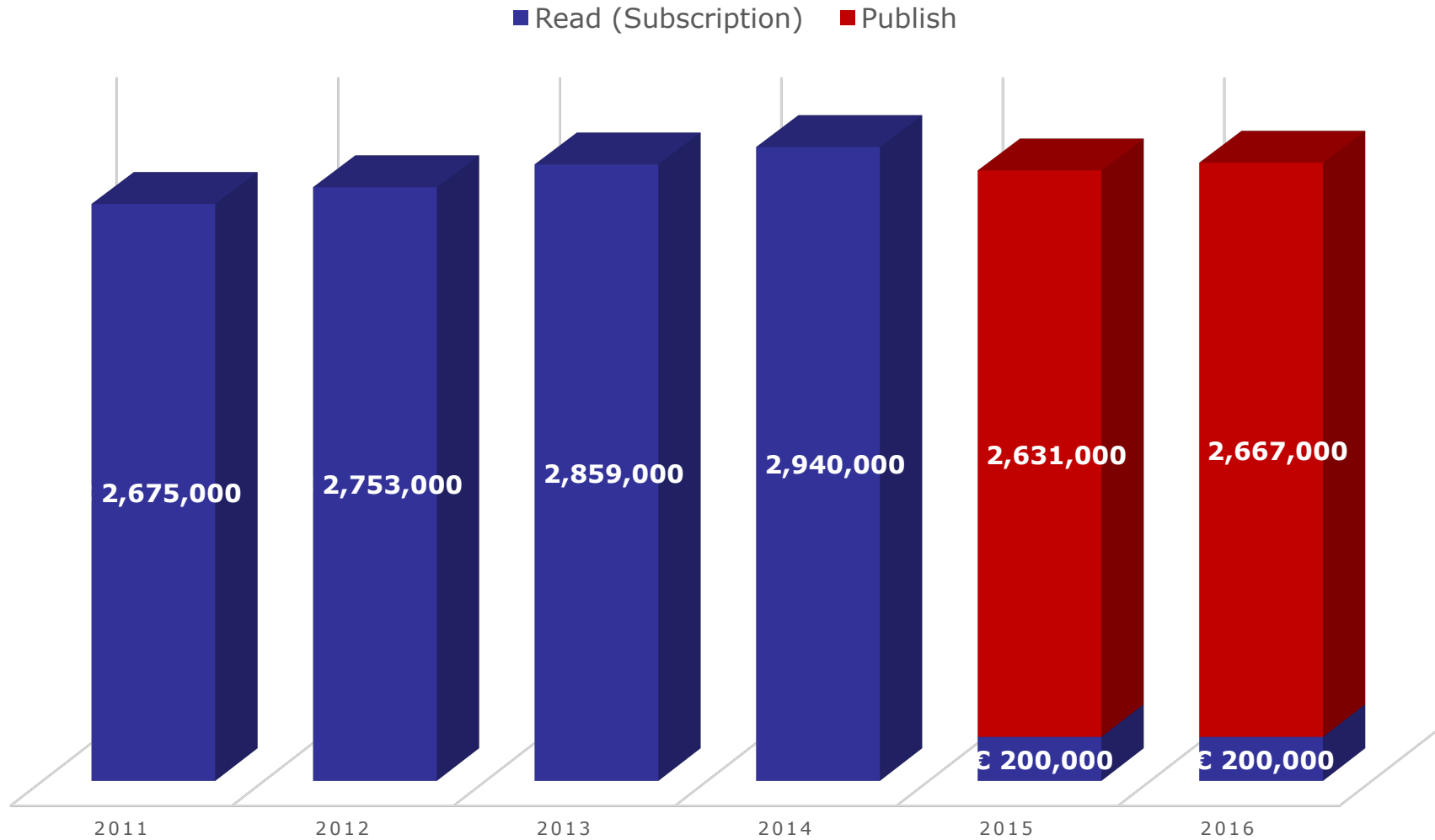
Offsetting Agreements Netherlands («BIG DEAL»)

- Elsevier
- Wiley
- Springer
- Taylor & Francis
- American Chemical Society (ACS)
- Cambridge University Press
- Royal Society of Chemistry (RSC)
- Karger
- Sage
- Thieme
- Emerald

+ 8000 Hybrid Journals
in which corresponding authors of Dutch universities and academic hospitals can publish in open access **for free or with substantial discount.**

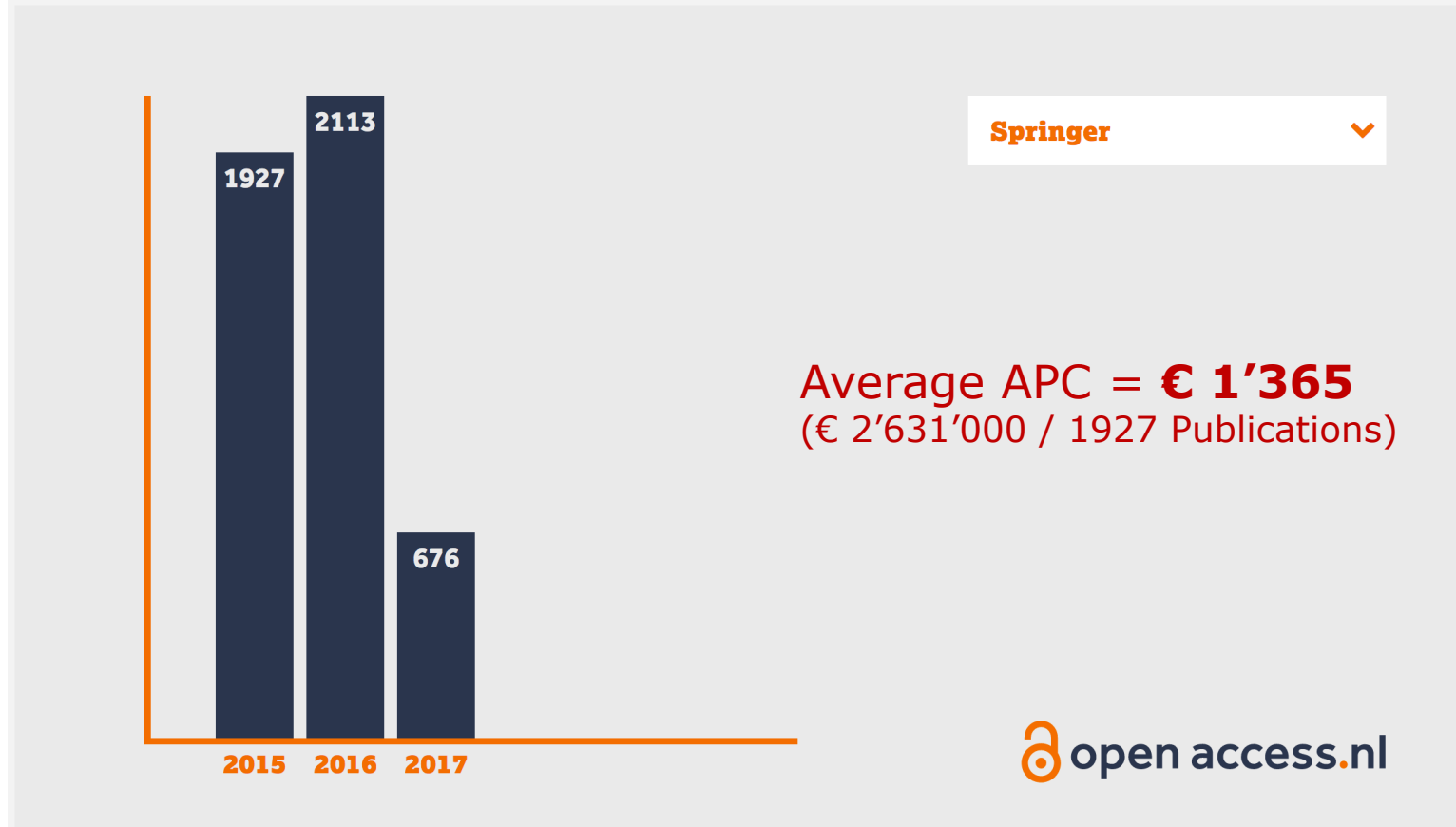
NL

SPRINGER JOURNALS COSTS NETHERLANDS



NL

Open access publications per year sorted by publisher



This data has been updated on 25 april 2017. These figures are indicative: no rights can be derived from them.

Germany – «BIG DEAL»

Verhandlungsziel für Elsevier, Springer und Wiley:

- Die DEAL-Einrichtungen haben dauerhaften Volltextzugriff auf das gesamte Titel-Portfolio (E-Journals) der ausgewählten Verlage.
- Alle Publikationen von Autorinnen und Autoren aus deutschen Einrichtungen werden automatisch Open Access geschaltet (CC-BY, inkl. Peer Review).
- Angemessene Bepreisung nach einem einfachen, zukunftsorientierten Berechnungsmodell, das sich am Publikationsaufkommen orientiert.

DE - DEAL: 140 Institutionen kündigen Elsevier

Auf Ende 2016

Universitäten:

RWTH Aachen
Uni Augsburg
Uni Bamberg
Uni Bielefeld
TU Braunschweig
Universität der Bundeswehr
Hamburg
Universität der Bundeswehr
München
TU Clausthal
TU Dortmund
Uni Eichstätt-Ingolstadt
Uni Erlangen-Nürnberg
Uni Göttingen
Uni Greifswald
FernUni Hagen
Uni Halle
Uni Hamburg
Uni Hannover
TU Ilmenau
Uni Lübeck
Uni Lüneburg
TU München
Uni Münster
Uni Osnabrück
Uni Passau
Uni Regensburg
Uni Rostock
Uni Siegen
Uni Weimar
Uni Wuppertal
Uni Würzburg

Hochschulen

FH Aachen
HS Bonn-Rhein-Sieg
HS Darmstadt
HS Emden/Leer
Frankfurt UAS
HS Fresenius
HS Geisenheim University
HS Hannover
Medizinische Hochschule
Hannover
Stiftung Tierärztliche Hochschule
Hannover
DSHS Köln
TH Köln
HHL – Leipzig Graduate School
of Management
HS Osnabrück
HS Ostwestfalen-Lippe
HS Rhein-Waal

Forschungseinrichtungen

Deutsches Institut für Ernährungsforschung Potsdam-
Rehbrücke
Deutsches Institut für Internationale Pädagogische
Forschung
Forschungszentrum Borstel
Institut für Arbeitsmarkt- und Berufsforschung
Institut für Deutsche Sprache
Julius Kühn-Institut
Leibniz-Institut für Agrarentwicklung in
Transformationsökonomien Halle
Leibniz-Institut für Analytische Wissenschaften – ISAS – e.V.
Leibniz-Institut für Arbeitsforschung an der TU Dortmund
Leibniz-Institut für Astrophysik Potsdam (AIP)
Leibniz-Institut DSMZ-Deutsche Sammlung von
Mikroorganismen und Zellkulturen GmbH
Leibniz-Institut für Festkörper- und Werkstoffforschung
Leibniz-Zentrum für Marine Tropenforschung
Leibniz-Institut für Nutztierbiologie
Leibniz-Institut für ökologische Raumentwicklung
Leibniz-Institut für Ostseeforschung Warnemünde
Leibniz-Institut für Pflanzenbiochemie
Leibniz-Institut für Pflanzengenetik und
Kulturpflanzenforschung
Leibniz-Institut für Polymerforschung Dresden e. V.
Leibniz-Institut für Wirtschaftsforschung Halle
Leibniz-Institut für Zoo- und Wildtierforschung
Mathematisches Forschungsinstitut Oberwolfach gGmbH
Paul-Ehrlich-Institut
RWI – Leibniz-Institut für Wirtschaftsforschung
Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH
ZBW – Leibniz-Informationszentrum Wirtschaft

Regionalbibliotheken

Bayerische Staatsbibliothek
Staatsbibliothek zu Berlin
Württembergische Landesbibliothek WLB Stuttgart

DE - DEAL: 140 Institutionen kündigen Elsevier

Auf Ende 2017

Universitäten:

Charité – Universitätsmedizin
Berlin
FU Berlin
HU Berlin
TU Berlin
Uni Bochum
Uni Bremen
TU Kaiserslautern
KIT Karlsruhe
Uni Freiburg
Uni Heidelberg
Uni Hohenheim
Uni Kiel
Uni Konstanz
Uni Mannheim
Uni Oldenburg
Uni Potsdam
Uni Stuttgart
Uni Trier
Uni Tübingen
Uni Ulm

Hochschulen

Ostbayerische TH Amberg-
Weiden
HaW Augsburg
FH Bielefeld
HS Gesundheit Bochum
HS Bremen
HS für Künste Bremen
HS Bremerhaven
HaW Coburg
TH Deggendorf
HaW Hamburg
TH Ingolstadt
FH Kiel
HaW Landshut
HaW München
TH Nürnberg Georg Simon Ohm
Ostbayerische TH Regensburg
HaW Rosenheim
HaW Würzburg-Schweinfurt

Forschungseinrichtungen

Alfred-Wegener-Institut – Helmholtz-Zentrum für Polar- und
Meeresforschung (AWI)
Bernhard-Nocht-Institut für Tropenmedizin
Bundesanstalt für Materialforschung und –prüfung (BAM)
Berlin
Deutsches Rheuma-Forschungszentrum (DRFZ) Berlin
Deutsches Zentrum für Neurodegenerative Erkrankungen e.
V. (DZNE) Bonn
GSI Helmholtzzentrum für Schwerionenforschung GmbH
Darmstadt
Helmholtzzentrum München – Deutsches
Forschungszentrum für Gesundheit und Umwelt
Helmholtzzentrum für Infektionsforschung
Leibniz Institute DSMZ-German Collection of Microorganisms
and Cell Cultures Braunschweig
Leibniz-Institut für Troposphärenforschung e. V. (TROPOS)
Leipzig
Robert Koch-Institut (RKI)
Zentrum für Europäische Wirtschaftsforschung GmbH (ZEW)

Germany – «BIG DEAL»

„Die Erfahrungen der ‚Aussteiger‘ zu Beginn des Jahres haben gezeigt, dass ein vertragsloser Zustand ohne Probleme zu bewältigen ist. Die Helmholtz-Bibliotheken sind gut aufgestellt und gehen davon aus, die Wissenschaftlerinnen und Wissenschaftler auch bei noch länger andauernden Verhandlungen zuverlässig mit den benötigten Artikeln versorgen zu können.“

Dr. Martin Köhler, Verhandlungsführer für die Helmholtz-Verträge mit Elsevier,
25.8.2017

Finnland

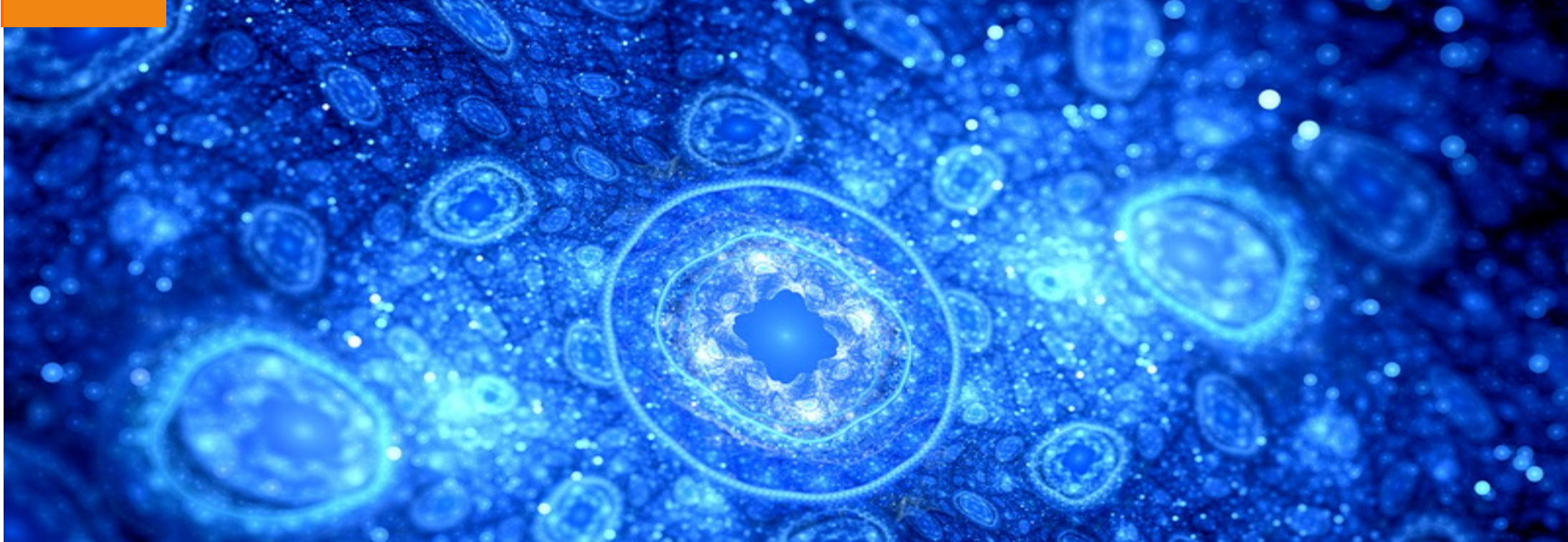
NO TO ELSEVIER'S UNFAIR DEALS

Since November 2016, more than 2700 members of the academic community in Finland have signed tiedonhinta.fi online petition which called for fair pricing for academic journal subscriptions and increased open access in the ongoing negotiation with international publishers. More than two thirds of those who signed the petition were prepared to abstain from editorial and reviewer duties in journals whose publishers are unwilling to meet the demands of the Finnish negotiators. It's time to stand by that commitment: no deal, no editing and reviews.

CONFIRM/JOIN THE BOYCOTT

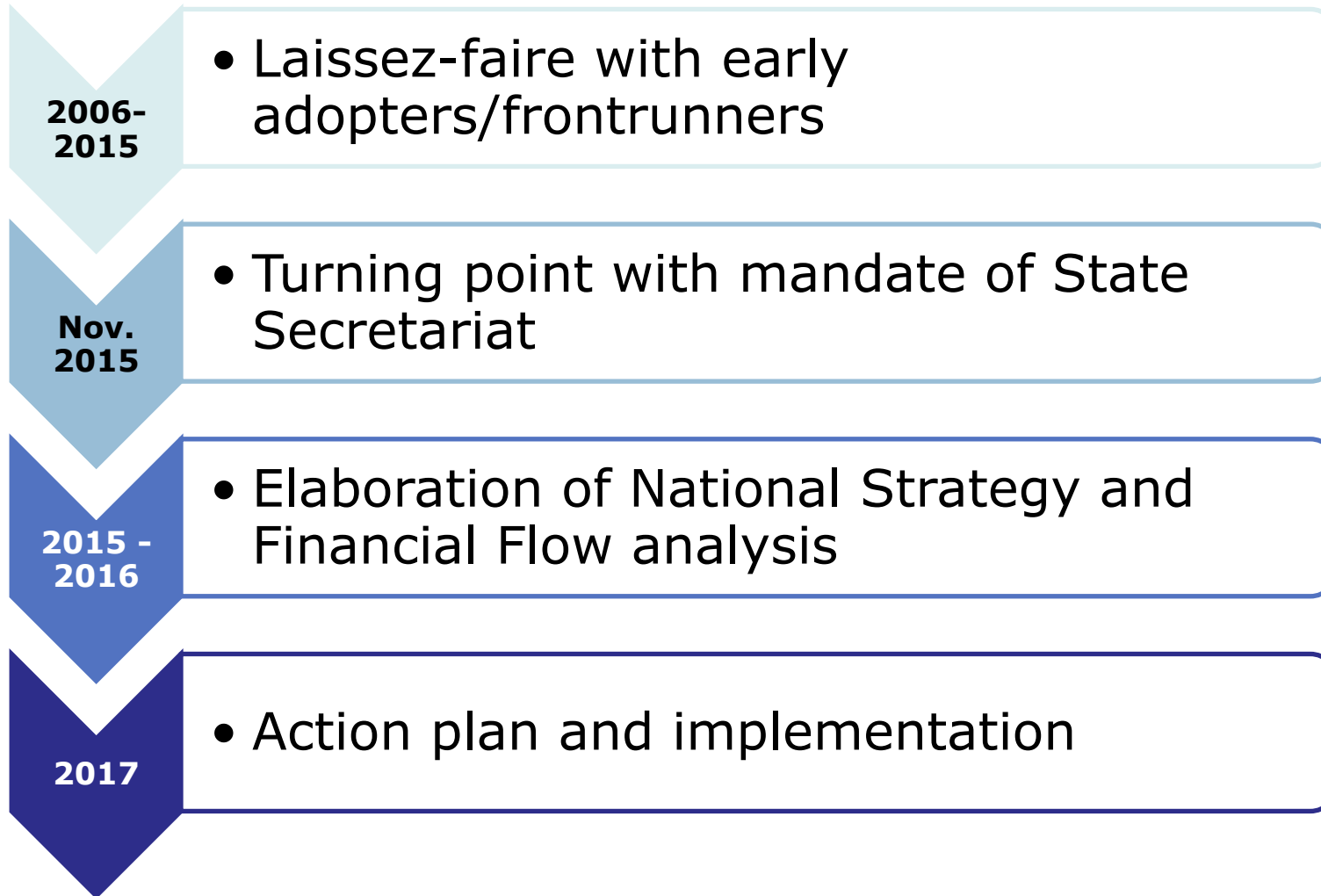
STATEMENT

Unless a fair deal is presented by Elsevier, the Finnish library consortium (FinElib) will not renew its subscriptions to Elsevier journals in:

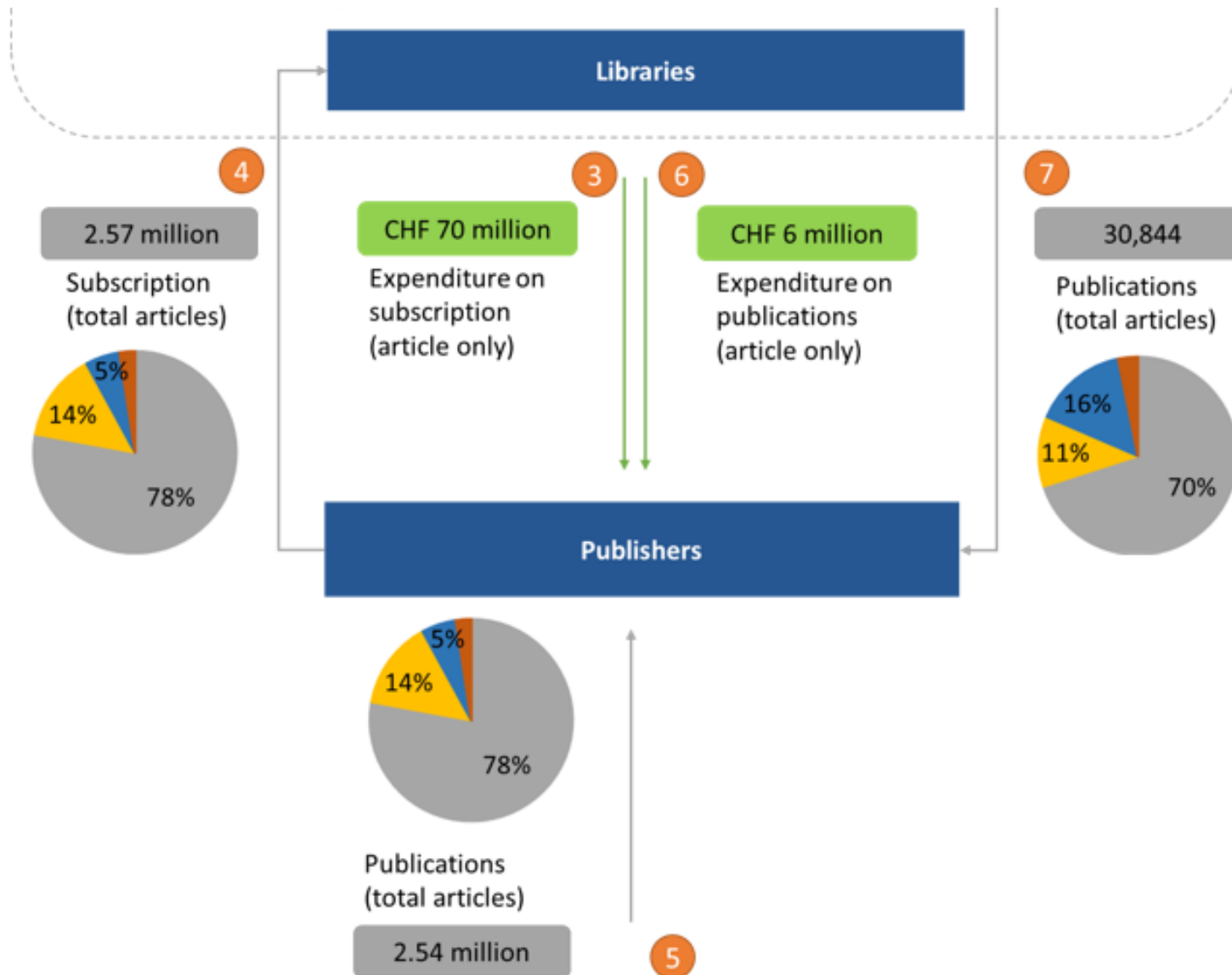


Open Access in Switzerland

Open Access in Switzerland: Policy Phases



Financial Flow Analysis

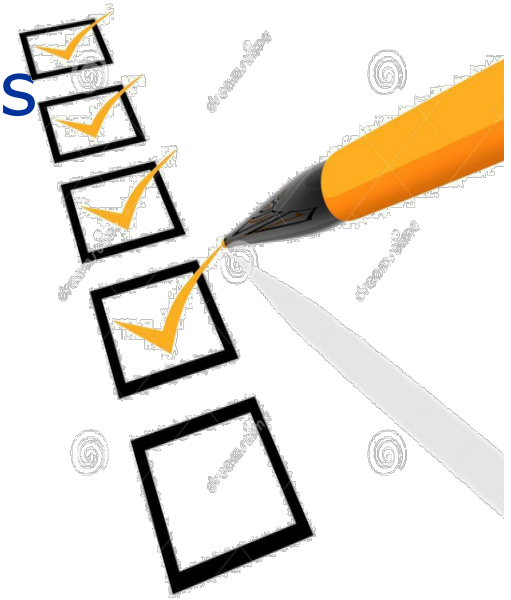


Im 2015, Swiss HEIs spent CHF 76 Mio on publications

- **70 mio CHF** in **subscription fees**
- **6 mio CHF** in **publication costs**
- **+ 2 mio CHF** in **Open Access infrastructure**

Recommendations Financial Flow Analysis

- Models: Mixed Gold and Green OA
- Improve quality of data
- National strategy and action plan required
- Subscription fees:
 - impact as function of bargaining power of Swiss institutions
 - Acting in a concerted fashion may reduce costs
- Infrastructure to facilitate OA needs to be developed
- Continue to be active in international discussions on OA
- Demonstrate leadership

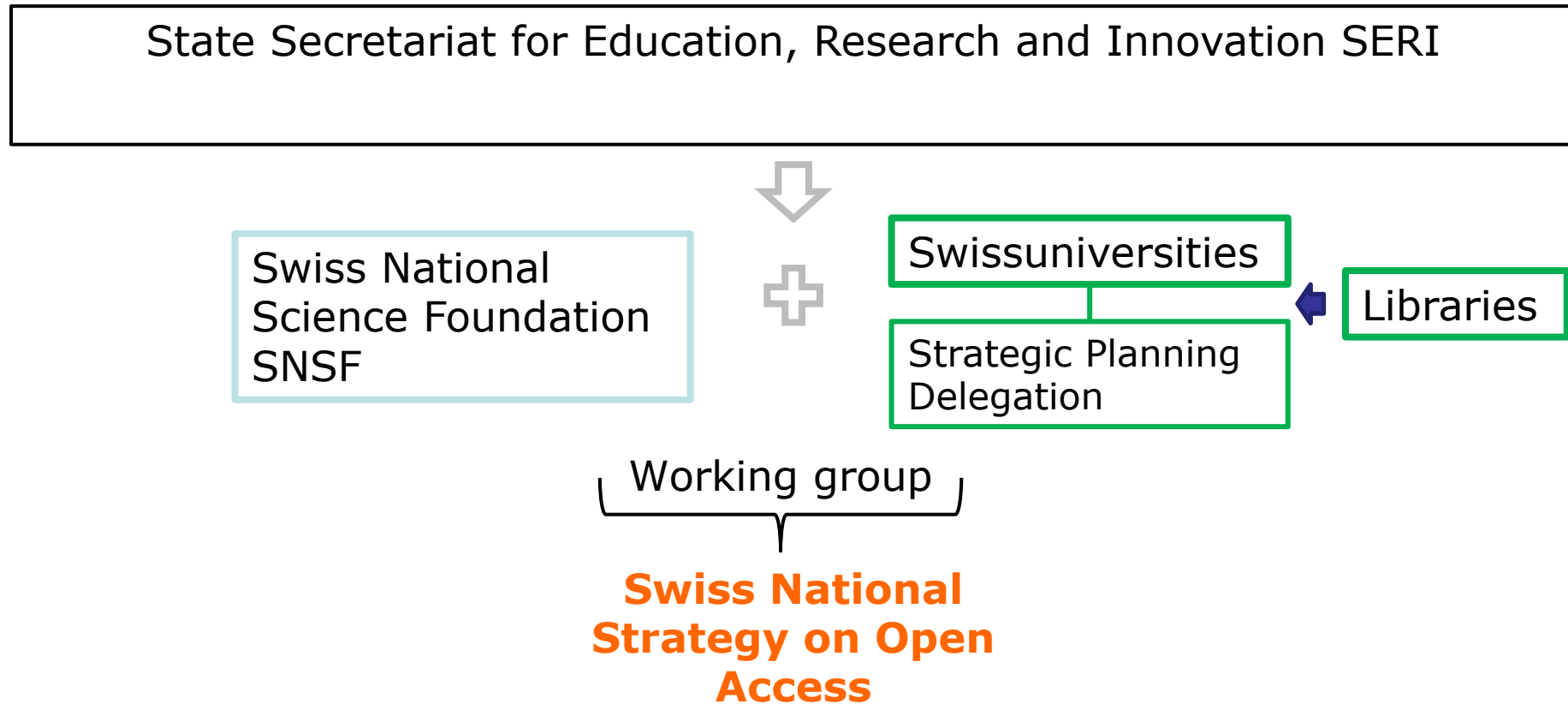


Springer Schweiz

In 2015:

- Swiss University libraries paid totally ~ **€ 3 Mio.** for journal subscriptions of Springer Journals (approx. same amount as the Dutch Universities).
- Swiss authors published around 2800 papers at Springer Journals (=9% of total article production in Switzerland).
- About 65% (estimation) out of these 2800 papers, have a Swiss corresponding author. -> 1820 Papers
- Applying the Dutch conditions: 1820 Papers * € 1365 APC = **€ 2.48 Mio**
- **Conclusion: To increase the Gold OA share by 6% in 2018, Swiss Universities simply have to insist on the same (or even better) conditions like the Dutch Universities in the upcoming negotiations.**

Swiss National Open Access Strategy: Set Up



Approval by **swissuniversities Board** on December 14th 2016
Approval by the **Swiss Conference of HEIs** in February 2017

National Strategy: Vision

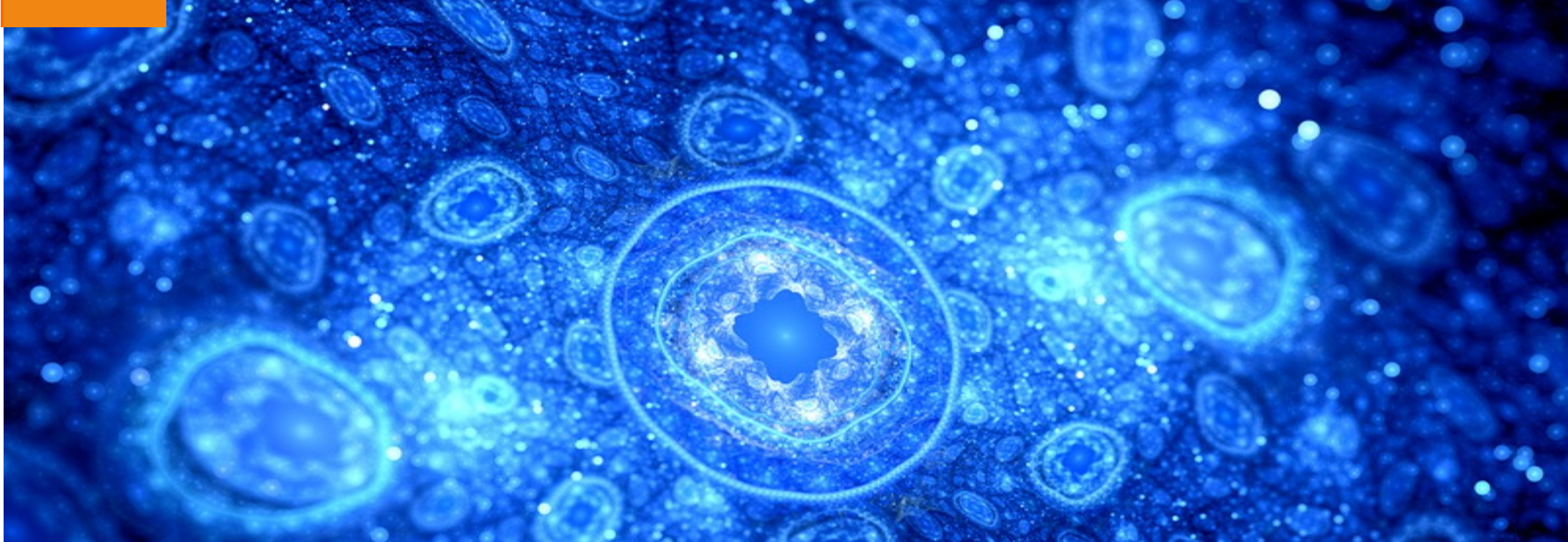


Objectives for Switzerland

- 100% of all scholarly publication activity in Switzerland OA by **2024**
- 100% scholarly publications funded by public money must be freely accessible on the internet.
- Landscape with a mix of OA models

EU objective

- 100% of scholarly publications OA by **2020**

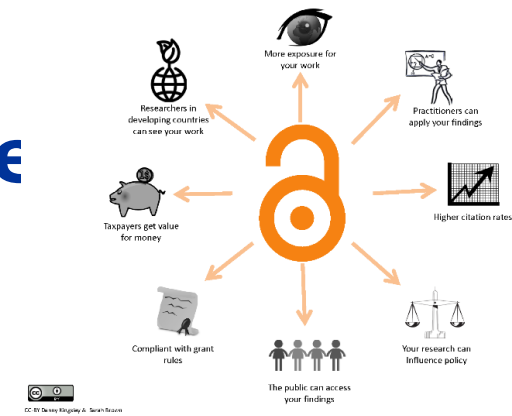


Open Access at SNSF

Open Access Policy at SNSF: Developme

SNSF Open Access Policy since 2008/2014

- **2006:** signing Berlin Declaration
- **2008:** requirement for self-archiving («green OA»)
- **2013:** funding for articles in Open Access Journals («gold OA»)
- **2014:** inclusion of books in Open Access policy
- **2015:** launch pilot project OAPEN-CH
- **2016:** financial flow analysis
- **2016/2017:** national Open Access Strategy & Action Plan
- **March 2017:** Open Access Strategy 2020



OA-Monitoring output data SNSF-grants 2017

All publications in P3 2011-2017: 68'548 publications

35% DOI unknown

65% DOI known

53% Closed Access

13%
Gold

34% Green

47% Open Access



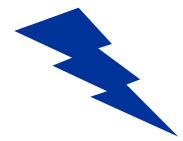
APC-funding SNSF

	Okt 2013 – Aug 2015	Sept 2015 – Jan 2017
Number APC / year	21	82
Sum APC / year	CHF 29'000.-	CHF 145'000.-
average APC	CHF 1'350.-	CHF 1'771.-

The SNSF OA Strategy 2020



As decided by the Presiding Board of the National Research Council in March 2017



all (100%) publications out of SNSF-funded projects **Open Access** available by **2020**

- **unrestricted access** and **free of charge**
- Goals in line with Open Access strategy of **European Union (2020)**
- Goals more ambitious than Swiss **National Open Access Strategy (2024)**

SNF OA 2020



OA Policy Changes

- Book Processing Charges
- Book Chapters
- Adjust Embargos

Sanctions & Monitoring

- Systematic Monitoring of OA Compliance
- Sanctions for Non-Compliance

Incentives & Support

- APC without Upper Limit
- mySNF Input Forms and P3
- Separate handling of Gold OA Publications (independent of project duration)

Communication and promotion of OA

- SNSF Website
- mySNF
- Letter to Grant Holders

Excellence comprises openness

