

GOVERNING OPEN SCIENCE

David Budtz Pedersen PhD
Professor of Science & Impact Studies
Aalborg University Copenhagen

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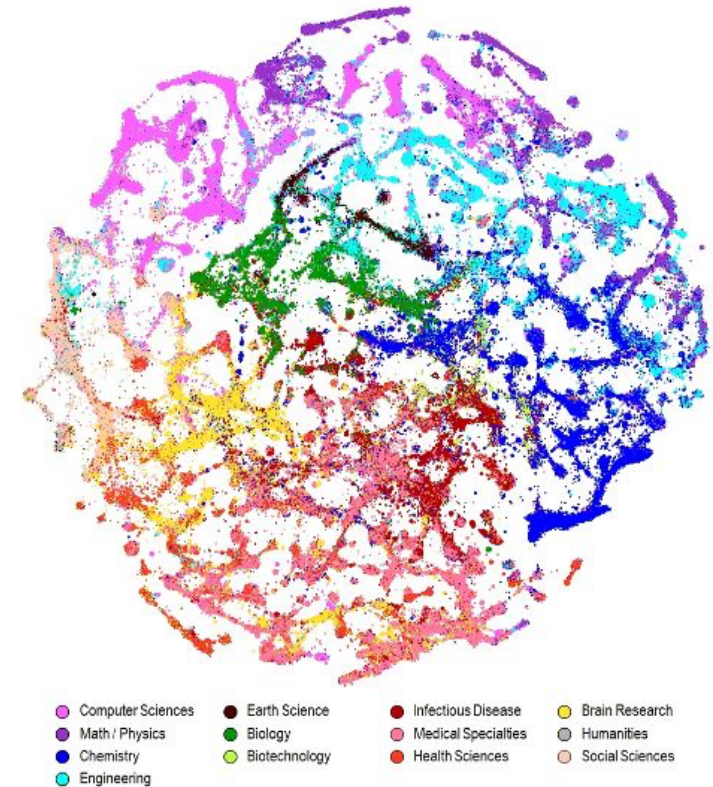


AALBORG UNIVERSITET

Humanomics Research Centre



- ❑ Meta-research unit focused on studying the interdisciplinary and societal impact of humanities and social sciences (SSH).
- ❑ Provide decision-makers and researchers with the skills and knowledge needed to support and develop impact indicators for SSH research.
- ❑ 15 researchers, grants: Velux Foundation, Danish Council for Independent Research, European Commission, Danish Ministry of Science etc.



Agenda

- The Emerging Open Science Agenda
- 2nd Wave Open Science
- How to track and record the impact of OS
- Incentives and governance for OS

Governing science in transition

- ❑ Universities and research units are expected to establish **a track record for impact** (for careers, funding, accountability etc.)
- ❑ Considerable dissatisfaction with the way science relates to economy & society (post-truth, post-trust, post-expert)
- ❑ “Failure” of translation mainly related to the science system and scientists (numerous studies e.g. ESRC 2009, Young 2008)
- ❑ Multiple interactions & activities (policy, media, cultural, health interactions) but limited indicators and incentives

Changing perception of STI

- From linear model to non-linear (co-creation, engagement, awareness, user-driven innovation, etc.).
- Knowledge production and knowledge exchange take place along a continuum of **research processes** (rather than products).
- **Broader societal impact** becomes obligatory component of research evaluation (EU, ERC, REF2014, NSF, SEP, Norway etc.)
- ‘Grand challenges’ (H2020), ‘Societal Missions (Mazzucato), Open Science (Moedas)

Challenges to status quo

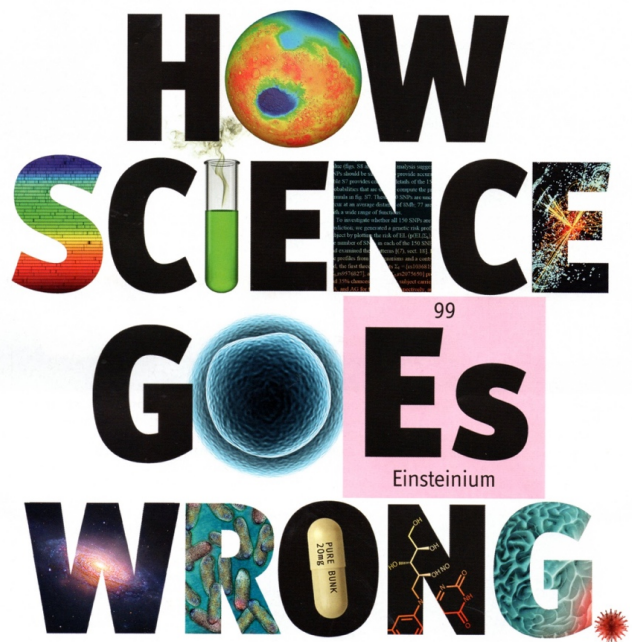
- Starting with OA, numerous voices around the global science community have been arguing for increased Openness.
- Openness not only to scientific publications but to the research process (diversity, inclusivity, engagement, citizen science, media)
- ‘Culture of compliance’ in existing frameworks dramatically underestimated (publish or perish, apply or die, gaming etc.).
- The free play of free minds is ‘a beautiful lie’ (Sarewitz); Non-applicable applied science (Besenbacher), reproducibility crisis etc.

The
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SPECIAL ISSUE: EES IN THE 21ST CENTURY

Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition

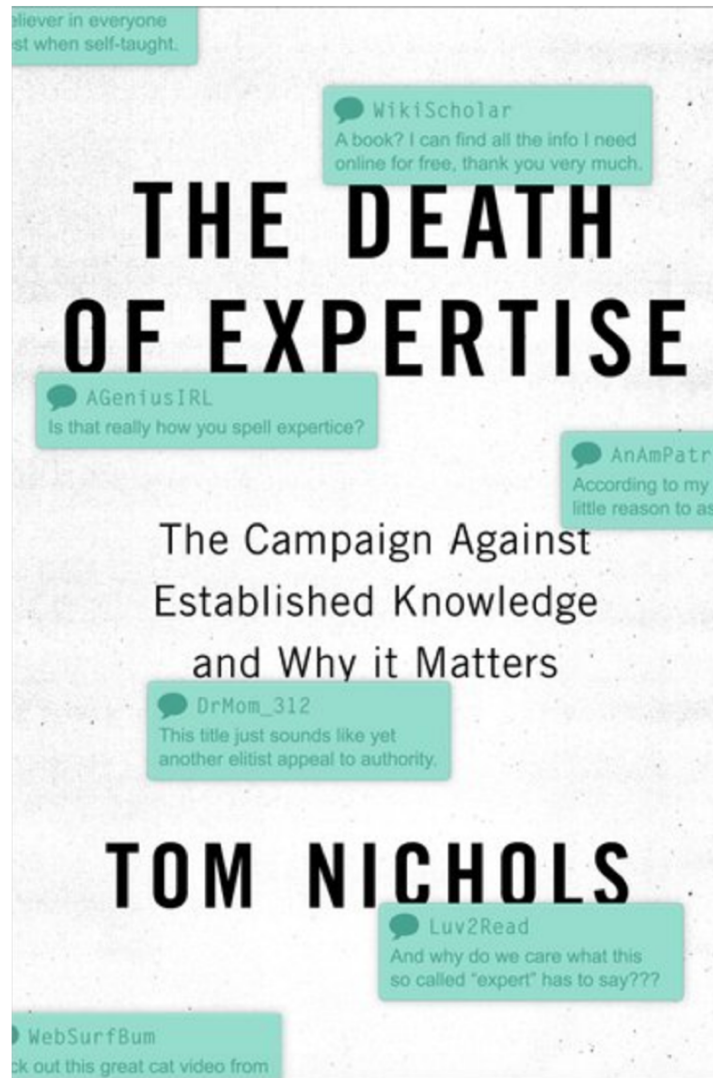
Marc A. Edwards* and Siddhartha Roy

Department of Civil and Environmental Engineering, Virginia Tech, Blacksburg, Virginia.

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Abstract

Over the last 50 years, we argue that incentives for academic scientists have become increasingly perverse in terms of competition for research funding, development of quantitative metrics to measure performance, and a changing business model for higher education itself. Furthermore, decreased discretionary funding at the federal and state level is creating a hypercompetitive environment between government agencies (e.g., EPA, NIH, CDC), for scientists in these agencies, and for academics seeking funding from all sources—the combination of perverse incentives and decreased funding increases pressures that can lead to unethical behavior. If a critical mass of scientists become untrustworthy, a tipping point is possible in which the scientific enterprise itself becomes inherently corrupt and public trust is lost, risking a new dark age with devastating consequences to humanity. Academia and federal agencies should better support science as a public good, and incentivize altruistic and ethical outcomes, while de-emphasizing output.



Brexit [+ Add to myFT](#)

Britain has had enough of experts, says Gove

Brexit campaigner offers to have disputed EU contribution figure audited



Justice Secretary Michael Gove takes part in a live Sky News Q&A on Brexit © PA



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JUNE 3, 2016 by [Henry Mance](#), Political correspondent

Michael Gove has refused to name any economists who back Britain's exit from the European Union, saying that "people in this country have had enough of experts".

The justice secretary, appearing in a Sky News question and answer session, sought to make a calm, understated case for Brexit — based largely on a promise of national self-reliance rather than [fears of immigration](#).

He said that Vote Leave, the official Out campaign, would publish more details on its economic plans next week. So far it has said the UK could cut VAT on fuel and spend "additional millions" on the NHS.

1st Wave Open Science

Open Science

Open science is the idea that scientific knowledge of all kinds should be openly shared as early as is practical in the discovery process.

Michael Nielsen, the Open Science Project
www.openscience.org



"Open Science, of which Open Access is an important part, will be vital to ensuring European progress and prosperity in the future"

(Carlos Moedas, JAN 26, 2015)



The future of research remains uncertain, and forthcoming developments will depend on the capacity of policy makers to enable a digital and Open Science and to gain efficiency in tackling societal challenges

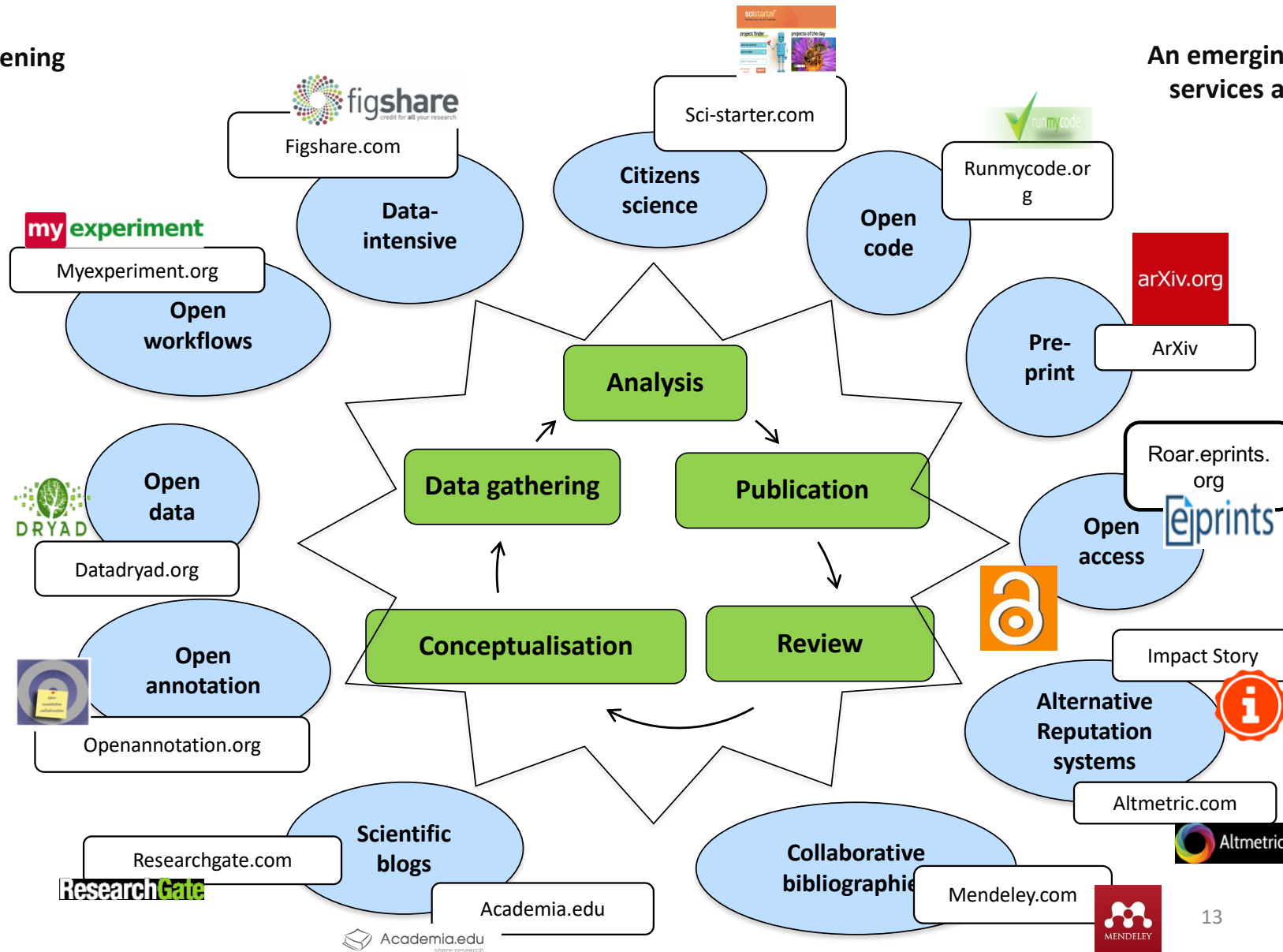
AN OECD HORIZON SCAN OF MEGATRENDS AND TECHNOLOGY TRENDS IN THE CONTEXT OF FUTURE RESEARCH POLICY

Opening up the research process

- The open science movement explores new methods for production, dissemination and integration of knowledge.
- It consists of a variety of initiatives aiming at a more open, transparent and collaborative scientific practice both inside and outside academic research (e.g. citizen scientists, scicomm).
- Engaging stakeholders in the process: data collection and analysis, communication, engagement etc.

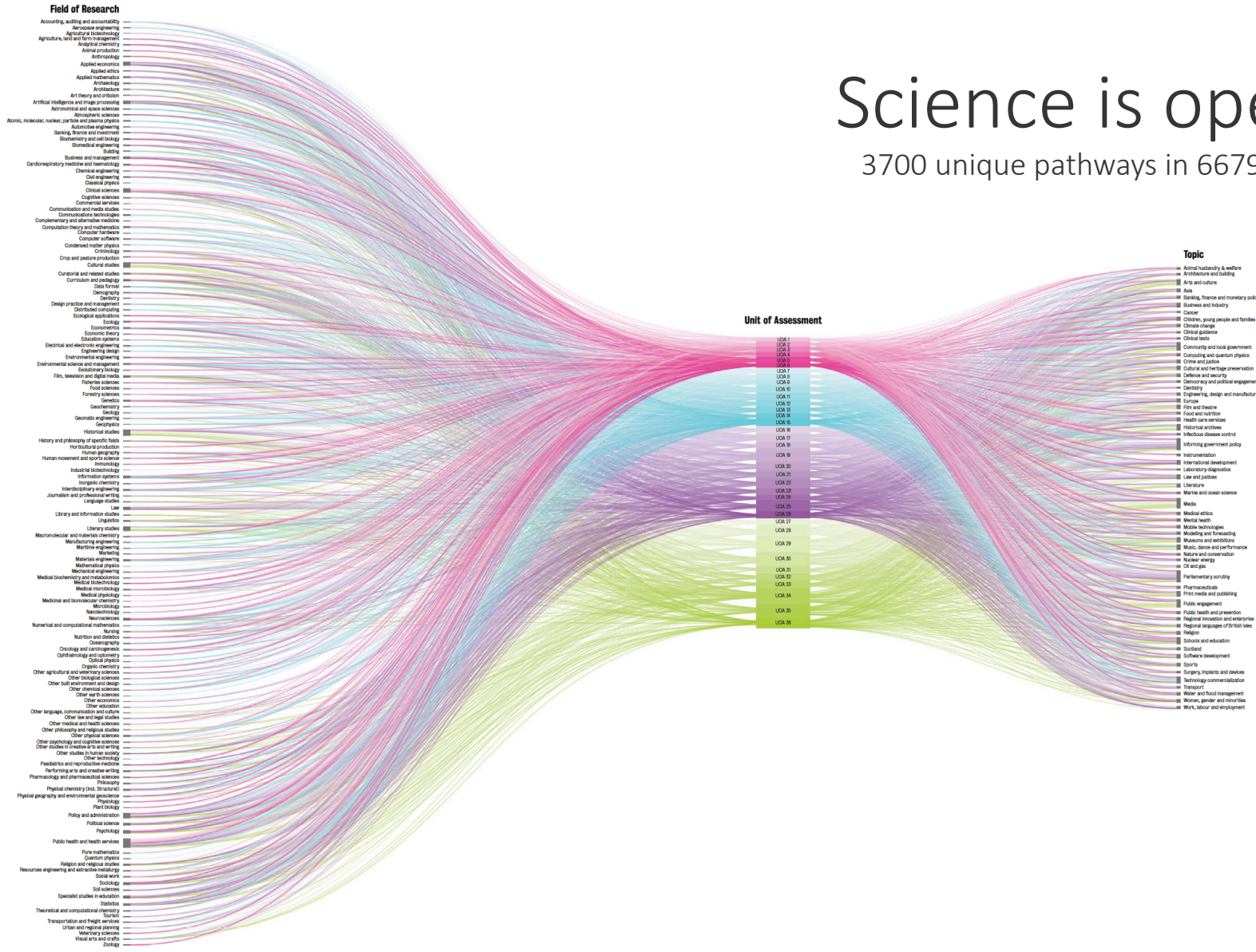
It is happening

An emerging ecosystem of services and standards



Science is open science

3700 unique pathways in 6679 REF impact case studies



2nd Wave Open Science

Accelerating Impact through OS

- Allow for knowledge ‘creeping’ in/out of research (Weiss) + informal interactions as baseline for societal integration (Molas-Galart 2011)
- Process tools: not business cards or press releases but **openness**
- Policy-makers and industry “are looking” for inspiration
- Making knowledge accessible for **multiple stakeholders** e.g. by proactive knowledge sharing tools (blogs, social media, open data, audio-visual research etc.)



“Missions around societal challenges are more complex than going to the moon and must be open, bottom up, flexible, adaptable and engage with citizens from the beginning”

Mariana Mazzucato 04.03.2018

Open Media Science

Kristian Moltke Martiny, David Budtz Pedersen and Alfred Birkegaard

In this article, we present three challenges to the emerging Open Science (OS) movement: the challenge of communication, collaboration and cultivation of scientific research. We argue that to address these challenges OS needs to include other forms of data than what can be captured in a text and extend into a fully-fledged Open Media movement engaging with new media and non-traditional formats of science communication. We discuss two cases where experiments with open media have driven new collaborations between scientists and documentarists. We use the cases to illustrate different advantages of using open media to face the challenges of OS.

Public engagement with science and technology; Science communication: theory and models; Visual communication

2nd Wave Open Science

Martiny, K.M.M.; Budtz Pedersen, D. & Hansted, A.A.B. (2016)



- ✧ Opening up science for genuine post-disciplinary collaboration has more radical consequences than OA and Open Data.
- ✧ Not dissemination (publications) but engagement (co-creation) characterises 2nd wave Open Science.
- ✧ Users, citizens, publics, policymakers, media can be **integrated** as resources and participants in the research process.

DOX BIO OG MOVING DOCUMENTARY PRÆSENTERER EN DOKUMENTARFILM MED JACOB YOON EGESKOV NOSSELL



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★★★★★ "VOLDSONT BEVÆGENDE OG TANKE-RUSKENDE DOKUMENTARFILM" JYLLANDS-POSTEN

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The Economist

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Open Science Travelogue



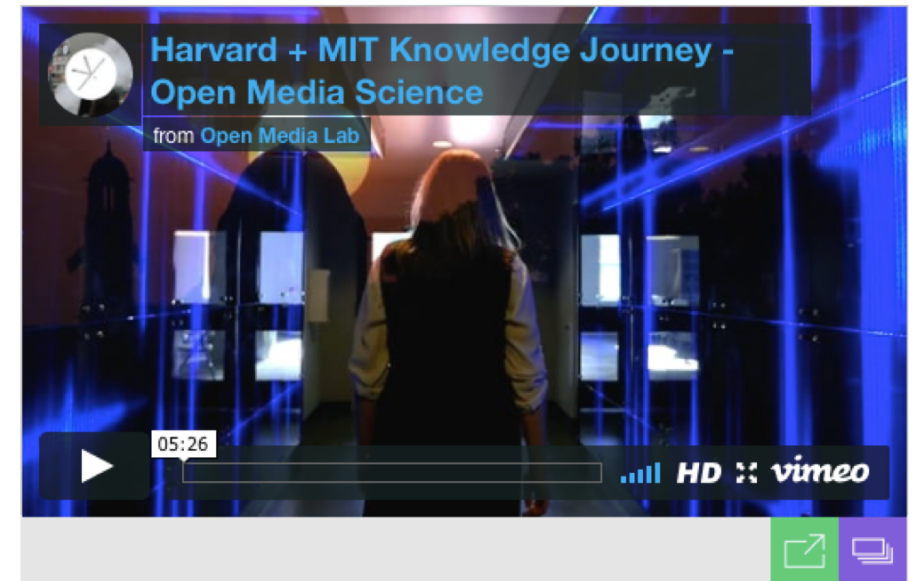
By David Budtz Pedersen
February 18, 2017

Open Science Travelogue

By David Budtz Pedersen, Kristian Martiny, Daniel Oxenhandler, Phil Clarke Hill and William Sloan

In the Fall of 2016, our team of researchers and filmmakers traveled to MIT and Harvard to explore the way film, media and technology are shaping the future of learning and knowledge production. Here is our travelogue.

Open Science is rapidly emerging as a new scientific practice. Around the world, the open science movement is already changing the culture of knowledge production, leaving behind closed academic circles and opening up research to new experiments and collaborations. As a result, ideas and data circulate more easily, making the research process open to collaboration and co-creation much earlier than is normally possible. While this pertains to knowledge sharing within academia, more radical consequences



Tracking the impact of OS

- When designing indicators, a one-size-fits-all solution is unlikely to work
- Develop indicators ‘in the wild’ – drawing on multiple impact pathways and inclusions of researchers & stakeholders in design.
- Open Science offers multiple data sources for tracking impact – but should be complemented with case studies and narratives.
- Knowledge uptake is a function of productive interactions among academic and non-academic partners: Impact Readiness Levels (IRL)

Outlook for University Governance

- Researchers need to see societal impact in addition to assessment of research quality (i.e. publication and citations)
 - Activities for society are not necessarily perceived as positive
 - Societal output is part of ‘other’ obligations; not related to science
- University management need to align ‘research assessment’ and ‘third mission’ activities (often seen as separate)
 - New pathways for scientific careers
 - Knowledge mobilization/brokering is joint task of researchers and research support
- Stakeholder roles need cultivation
 - Impact Readiness: there needs to be an infrastructure available for absorption of knowledge with shared responsibility (WWR 2015).

Thank you for the attention

- David Budtz Pedersen (davidp@hum.aau.dk)
- Twitter: @HumanomicsMap
- Website: www.mapping-humanities.dk

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