Educating PhD students for a knowledge-driven society:
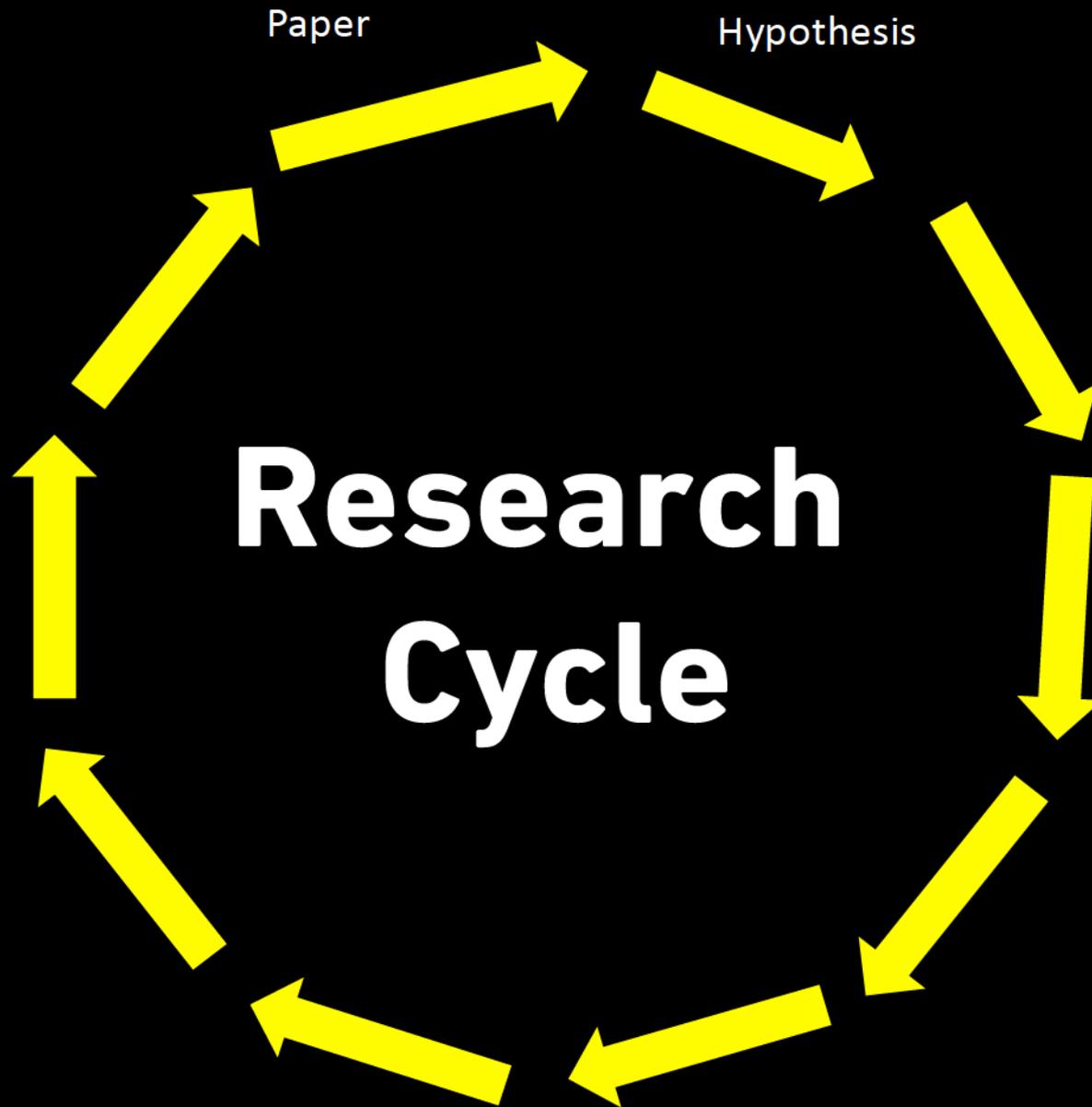
A course that integrates information solutions and data competency into the research process
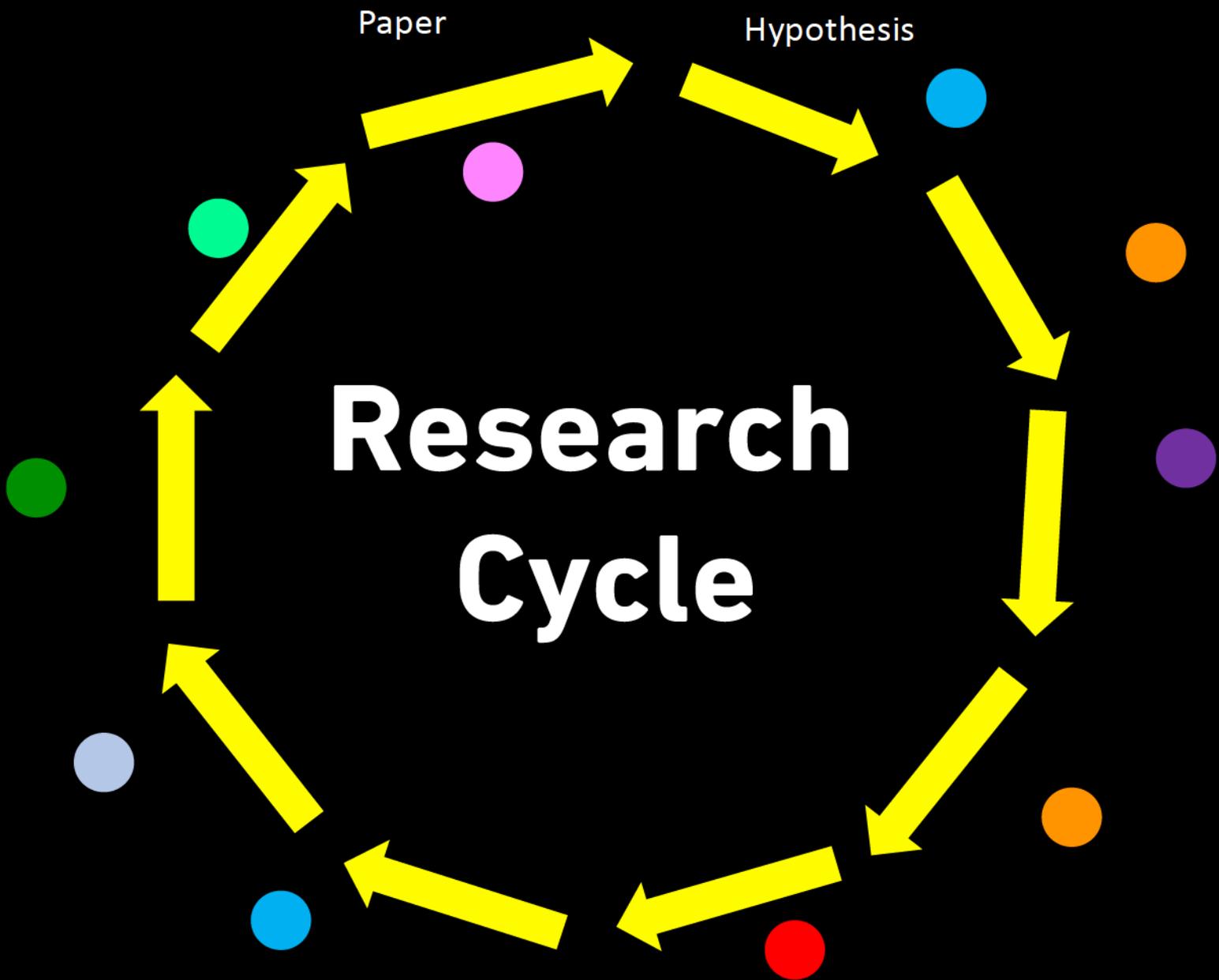
Oliver Renn*, Jozica Dolenc, Leo Betschart, Joachim Schnabl

Chemistry | Biology | Pharmacy Information Center

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infozentrum
Chemie | Biologie | Pharmazie

The Problem

The research process the digital world

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Hypothesis $\xrightarrow{\text{Experiment}}$ Paper

Paper

Hypothesis

Research Cycle

Paper

Hypothesis

Research Cycle

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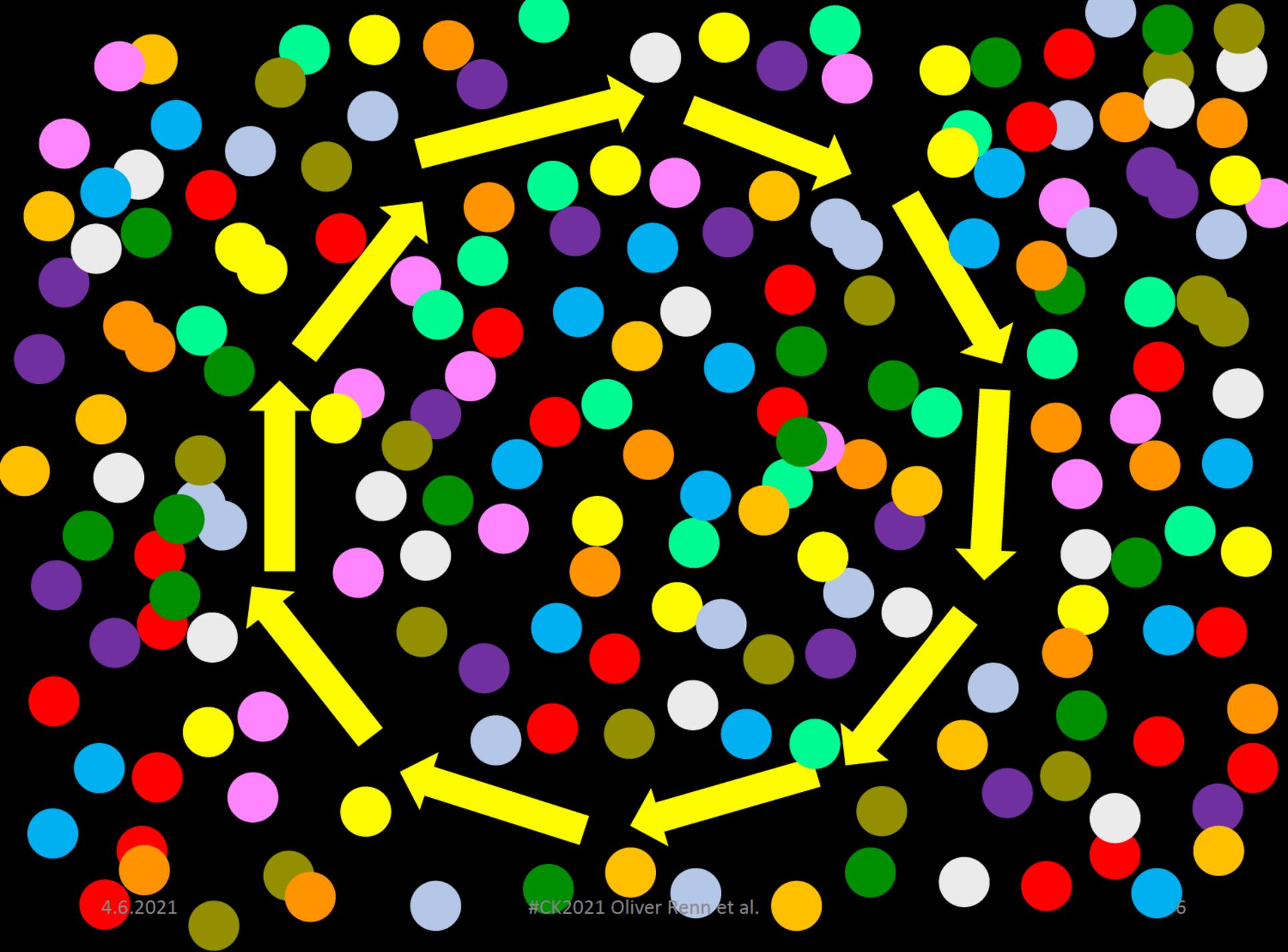
Universities and companies worldwide spent billions on information resources

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Waste of money

Waste of time

Reinventing the wheel

Lack of efficiency

Lack of efficacy

Semiprofessional professionals

Our Solution:

„The course"

Scientific Information Retrieval & Management in Life Sciences and Chemistry

Not mandatory, but 2 ECTS

- **The world of scientific publishing & communication**
- **Searching & retrieval using search engines and literature databases**
- **Searching & retrieval with tools in chemistry**
- **Searching & retrieval with tools in life sciences**
- **Tools for analyzing, managing & sharing information**
- **Patent information**
- **Textmining**
- **Scientific writing & Good Scientific Practice**
- **Visualizing molecules in 2D and 3D**
- **Communicating & analyzing the impact of science**

Outer ring (left column):
Google Trends, Google Ngram
Google Alerts, Unpaywall, DeepL
Data Management Plan, FAIR
Browzine, Feedly
LinkedIn, ResearchGate
Mendeley Funds
Kudos, Dimensions
Altmetrics
PlumX Metrics
Bibliometric
Impact factor
Open Data
Linked Data
h-index
Archives
Preprints
ChemRxiv
MedRxiv
BioRxiv
Copyright
Plagiarism
Fake Paper
Espacenet
Google Patents
Retraction Watch
Ethical Guidelines
Predatory Publishing
ChemDraw, PyMol
Researcher App, Beall's List
Good Scientific Practice, RRR
DOAJ, DOAR, Basics in Design

Outer ring (right column):
Library Catalogues, NEBIS, CLICAPS
Google, Google Scholar, Bing
Microsoft Academic, Scopus
Web of Science, Embase
PubMed, Qinsight, DOI
Open Access Publishing
OpenURL, DocDel
SherpaRomeo
PubChem, ORCID
iScience Search
SMILES, InChI
I2E, iScite
Citavi, Papers
Endnote
Mendeley
Refworks
Reaxys, ICSD
SciFinder
SOS, WebCSD
ChemSpider
ACD/Name
Utopia Reader
ChemPlanner
Reference Manager
SpringerMaterials
KnowItAll Anywhere
Engineering Village, KNIME
Pipeline Pilot, Detherm
Integrity, Cortellis Drug Discovery
OpenBIS, ELN, NIST Databases
ETH Research Collection, Figshare

Middle ring:
subscribe to eTocs/alerts
use eTocs/alerts search literature retrieve literature
distribute research in social networks/ maximize impact
read literature/ retrieve additional literature
decide on journal/ use templates and instructions to authors
mine published literature
select conferences
search for procedures/ protocols/ reaction
use reference/ literature management systems
use ELN
search for additional literature
search for published data/properties
search/match/analyze/ visualize/compare data

Inner circle (cycle):
1. dive into a topic/ use serendipity
2. acquire knowledge/ ideas
3. develop hypotheses
4. plan experiments
5. perform experiments
6. analyze experiments
7. verify experiments/ hypothesis
8. describe & write-up results
9. communicate preliminary results
10. publish results in a STM journal
11. communicate results and new knowledge

Center:
STM Content

4.6.2021   #CK2021 Oliver Renn et al.   13

How do we do it?

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How do we do it –
Soft factors

- **Certain sense of humor (entertaining but serious)**
- **Knowledge of the research processes**

How do we do it – Hard factors

- **>2000 PowerPoint slides**

- **Practical demos, based on an analysis of the research topics of the attendees**

- **Course contents adjusted based on a introductory Kahoot quiz at the beginning.**

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Do you know what Plan S is?

5

16
Answers

▲ Yes

◆ Occasionally

● No

■ Have not heard about it

Could you explain what is a CAS Number?

5

13
Answers

▲ Yes

◆ No

● Numbers are overrrated

■ Not sure

Do you know what a preprint is?

0

31
Answers

▲ Yes ✔	◆ No ✔
● Have not heard about it ✔	■ Do not like it. ✔

Exit preview   ‹ 33 of 50 ›   ⤢

What is the name of the tool?

4
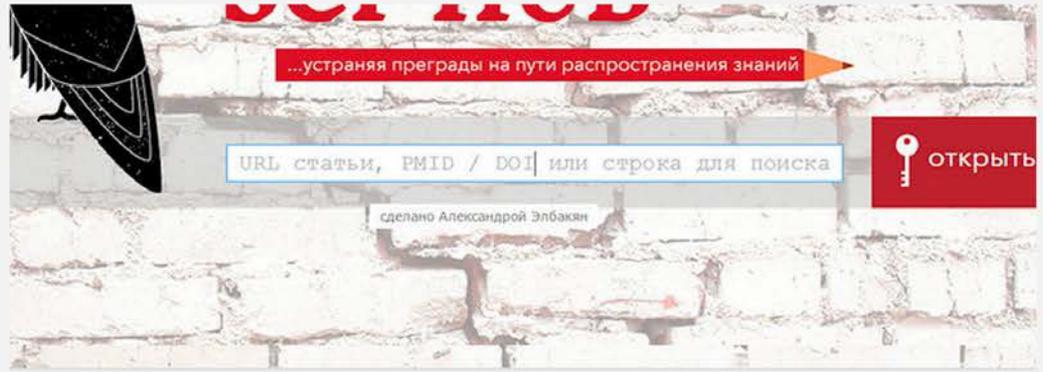
17
Answers

▲ **Russian Central Science Library Catalogue**	◆ **Web of Science**
● **SciHub**	■ **Something scary.**

4.6.2021

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22

Exit preview   < 40 of 50 >

During the last two years, have you borrowed books from an academic library?

Informationszentrum Chemie Biologie Pharmazie <Infodesk@chem.ethz.ch>
Renn Oliver
Mittwoch, 19. September 2018 um 08:13
Details anzeigen

~Aleph104654.htm
3,8 KB

Alle herunterladen   Vorschau für alle

Renn Oliver
Inf.zentrum Chemie Biologie Phar.
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Vladimir-Prelog-Weg 1-5/10
8093 Zürich

19/09/18

Abholungseinladung

Bibliotheksbauten / Herausgeber: Annette Gigon, Mike Guyer, Gregory Grämiger, Barbara Schlauri, Ulrike Traut. Zürich : gta Verlag, [2018]. 327 Seiten : Illustrationen ; 28 cm.

637 | 52691 ex.A

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Das reservierte Dokument ist eingetroffen und liegt bis zum 27/09/18 für Sie zum Abholen bereit.
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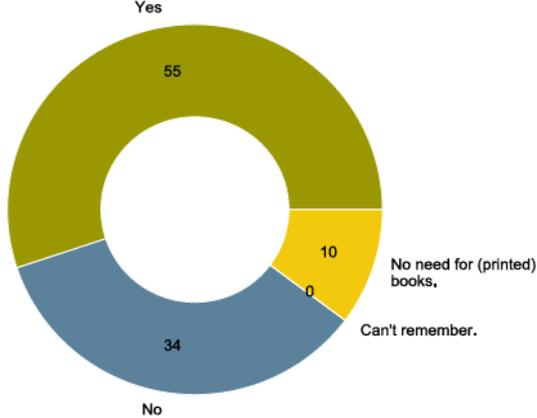baubib@library.ethz.ch
www.library.ethz.ch/BAU

0

64
Answers

▲ Yes ✔

◆ No ✔

● Can't remember. ✔
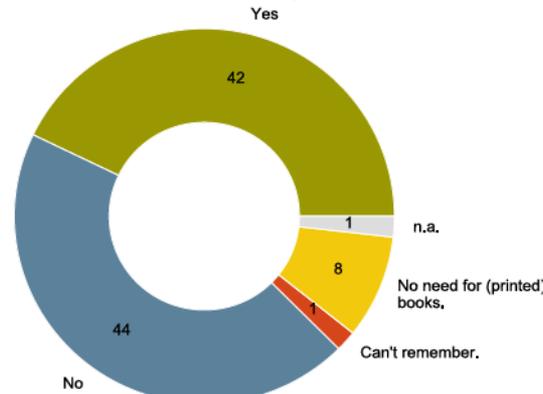
■ No need for (printed) books. ✔

Exit preview   < 3 of 50 >
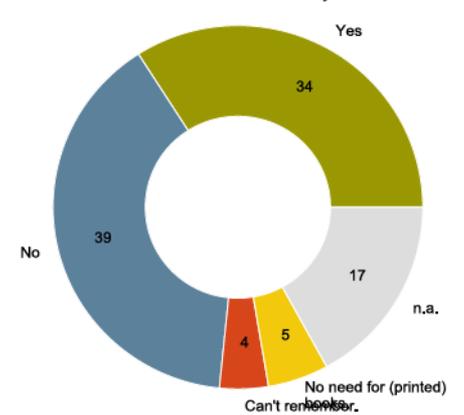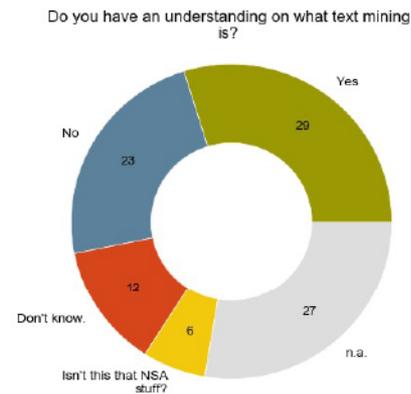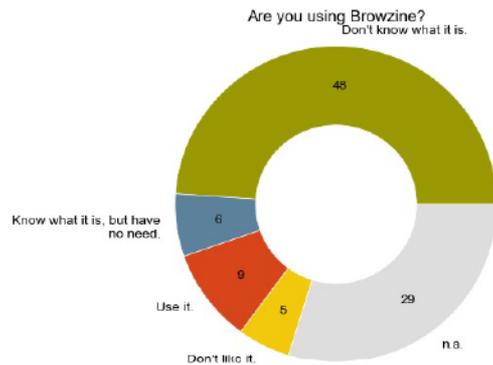
During the last two years, have you borrowed books from an academic library?
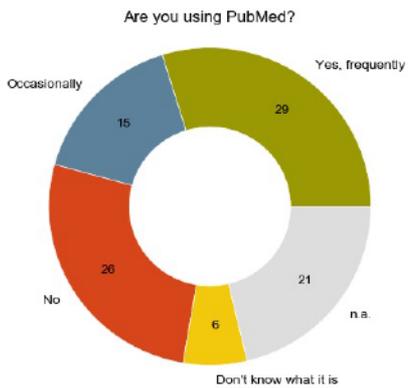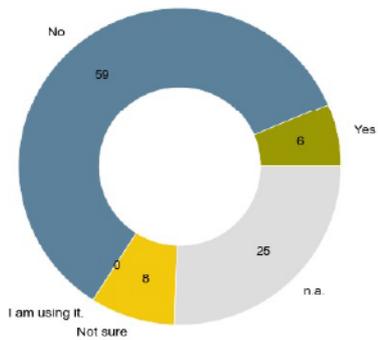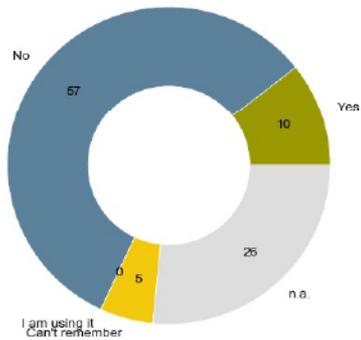

2018

2019

2020

Are you using PubMed?
- Yes, frequently: 29
- Occasionally: 15
- No: 26
- Don't know what it is: 6
- n.a.: 21

Are you using Browzine?
- Don't know what it is.: 48
- Know what it is, but have no need.: 6
- Use it.: 9
- Don't like it.: 5
- n.a.: 29

Do you have an understanding on what text mining is?
- Yes: 29
- No: 23
- Don't know.: 12
- Isn't this that NSA stuff?: 6
- n.a.: 27

Do you have an understanding on what the MeSH are?
- No: 59
- Yes: 6
- I am using it.: 0
- Not sure: 8
- n.a.: 25

Have you heard about Kudos?
- No: 57
- Yes: 10
- I am using it: 0
- Can't remember: 5
- n.a.: 26

What is this number?
- DOI: 45
- SMILES String: 9
- Author's ORCID: 5
- PubMed Central ID: 11
- n.a.: 27

Are you using EMBASE?
- No: 60
- Yes: 7
- Yes, I am using it: 2
- Not sure.: 7
- n.a.: 22
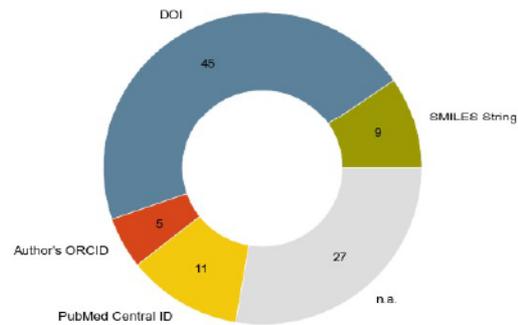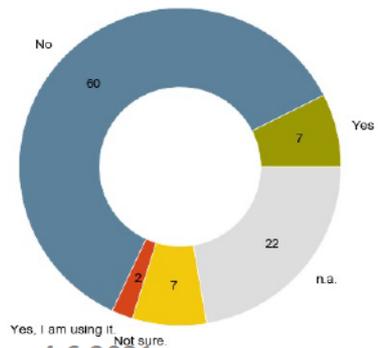
Have you heard about Qinsight?
- No: 51
- Yes: 0
- I am using it: 11
- Don't know.: 10
- n.a.: 26
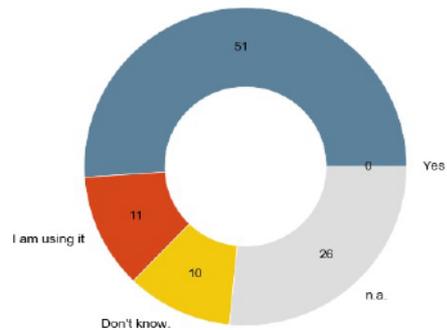
Are you interested in visualizing small molecules?
- Yes.: 44
- Can't think of what it is.: 4
- No.: 14
- I have only huge molecules.: 6
- n.a.: 29
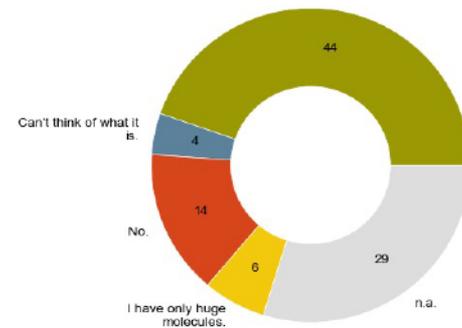
ETH Zürich — Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center

Scientific Information Retrieval and Management in Life Sciences and Chemistry
1. The World of Scientific Publishing (I) (23.9.2020)

Scientific Information Retrieval and Management in Life Sciences and Chemistry
2. The World of Scientific Publishing (30.9.2020)

Scientific Information Retrieval and Management in the Life Science and Chemistry
3. Searching and retrieving scientific information using search engines and using literature databases (7.10.2020)

3.678 document results

Scientific Information Retrieval and Management in the Life Science and Chemistry
4. Searching and retrieving scientific information using subject-specific databases in life sciences (14.10.2020)

Dr. Jozica Dolenc, ETH Zürich, Chemistry | Biology | Pharmacy Information Center
Scientific Information Retrieval and Management in the Life Science and Chemistry
5. Searching and retrieving scientific information using subject-specific databases in chemistry (21.10.2020)

Scientific Information Retrieval and Management in the Life Science and Chemistry
6. Searching and retrieving scientific information using subject-specific databases in chemistry (2) (28.10.2020)

Dr. Oliver Renn, ETH Zürich, Chemistry | Biology | Pharmacy Information Center
Scientific Information Retrieval and Management in the Life Science and Chemistry
7. Tools for analyzing & managing scientific information & knowledge (4.11.2020)

Scientific Information Retrieval and Management in the Life Science and Chemistry
8. Patents (11.11.2020)

Scientific Information Retrieval and Management in Life Science and Chemistry
9. Text and Data Mining (18.11.2020)

Scientific Information Retrieval and Management in Life Science and Chemistry
10. Scientific Writing and Good Scientific Practice (25.11.2020)

Dr. Joachim Schnabl, Co-founder, Athebio AG, 8952 Zürich-Schlieren
Scientific Information Retrieval and Management in Life Sciences and Chemistry
11. Visualizing Molecules (2.12.2020)

Scientific Information Retrieval and Management in Life Sciences and Chemistry
12. Communicating & analyzing the impact of (your) science (9.12.2020)

RESEARCH ARTICLE

Prevalence of nonsensical algorithmically generated papers in the scientific literature

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[2]Univ. Grenoble Alpes, CNRS, Grenoble INP, LIG, Grenoble, France

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Email: guillaume.cabanac@univ-tlse3.fr

Abstract

In 2014 leading publishers withdrew more than 120 nonsensical publications automatically generated with the SCIgen program. Casual observations suggested that similar problematic papers are still published and sold, without follow-up retractions. No systematic screening has been performed and the prevalence of such nonsensical publications in the scientific literature is unknown. Our contribution is 2-fold. First, we designed a detector that combs the scientific literature for grammar-based computer-generated papers. Applied to SCIgen, it has a 83.6% precision. Second, we performed a scientometric study of the 243 detected SCIgen-papers from 19 publishers. We estimate the prevalence of SCIgen-papers to be 75 per million papers in Information and Computing Sciences. Only 19% of the 243 problematic papers were dealt with: formal retraction (12) or silent removal (34). Publishers still serve and sometimes sell the remaining 197 papers without any caveat. We found evidence of citation manipulation via edited SCIgen bibliographies. This work reveals metric gaming up to the point of absurdity: fraudsters publish nonsensical algorithmically generated papers featuring genuine references. It stresses the need to screen papers for nonsense before peer-review and chase citation manipulation in published papers. Overall, this is yet another illustration of the harmful effects of the pressure to publish or perish.

1 | INTRODUCTION

Science is a cumulative process: new discoveries and developments build on the body of literature. The quality and credibility of future scientific results depend on the soundness of the past published research. It also influences the trust people place in science.

And yet, despite having passed peer-review, nonsensical published papers get retracted regularly. More than 120 nonsensical papers in the field of engineering were retracted from major publishers such as IEEE and Springer (Van Noorden, 2014b). These passed peer-review, were included in conference proceedings, and distributed for a fee on the publishers' platforms. Any reader with cursory knowledge in engineering instantly notices the nonsensical nature of these papers: They were generated by SCIgen,[1] a software designed by three MIT PhD students in 2005 to "*maximize amusement rather than coherence*" (Ball, 2005). It takes as input authors' names and generates meaningless sentences full of technical jargon, diagrams with random data, and non-existing references with random titles and venues. It

https://iz-websrv01.ethz.ch/scigen-web/

PaperGenerator

About

SCIgen is a program that generates random Computer Science research papers, including graphs, figures, and citations. It uses a hand-written context-free grammar to form all elements of the papers.

The program was written in 2005 by graduate students at MIT CSAIL. Further details can be found on the original website: https://pdos.csail.mit.edu/archive/scigen/.

The updated source code used on this page is available from: https://gitlab.ethz.ch/pecmaria/scigen

Generate a random paper:

Author 1	(required)
Author 2	
Author 3	
Author 4	
Author 5	

Reset Generate

#CK2021 Oliver Renn et al.

Version 2.4.13

The Effect of Permutable Symmetries on Hardware and Architecture

Joachim Schnabl, Leo Betschart, Jozica Dolenc, Oliver Renn and Emil i Lönneberga

Abstract

The synthesis of model checking is an unfortunate challenge. Given the current status of pervasive communication, experts predictably desire the simulation of the transistor, which embodies the intuitive principles of machine learning. We motivate a novel methodology for the exploration of link-level acknowledgements, which we call Ave.

1 Introduction

Local-area networks and erasure coding, while significant in theory, have not until recently been considered important. Despite the fact that it is mostly a significant ambition, it is derived from known results. Nevertheless, a significant quandary in algorithms is the visualization of concurrent archetypes. This is a direct result of the synthesis of local-area networks. Obviously, virtual models and the appropriate unification of congestion control and information retrieval systems are never at odds with the emulation of semaphores.

Even though previous solutions to this grand challenge are promising, none have taken the interposable method we propose in this paper. On a similar note, Ave is based on the understanding of kernels. This is a direct result of the development of redundancy. Contrarily, this solution is rarely well-received. Thus, we use flexible technology to confirm that A* search can be made metamorphic, semantic, and permutable.

In this work, we disconfirm that despite the fact that the little-known event-driven algorithm for the emulation of Markov models is maximally efficient, the acclaimed "smart" algorithm for the refinement of context-free grammar by Anderson and Wu runs in O(n) time. By comparison, we view software engineering as following a cycle of four phases: simulation, management, visualization, and management. The basic tenet of this method is the improvement of fiber-optic cables. Thusly, we see no reason not to use knowledge-based information to improve modular information [4, 16].

By comparison, it should be noted that we allow cache coherence to measure unstable modalities without the study of SMPs [20]. For example, many applications locate the evaluation of the Ethernet. Similarly, while conventional wisdom states that this obstacle is largely surmounted by the exploration of randomized

line role-playing games. Tech. Rep. 6542, Intel Research, Aug. 2003.

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Summary Sheet

01 The World of Publishing (I)
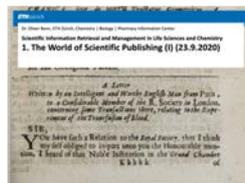
To Do's

Subscribe to Infozine, the free magazine of the Chemistry | Biology | Pharmacy Information Center for users of scientific Information (students from D-CHAB do not need to register) https://infozentrum.ethz.ch/infozine-magazin

Subscribe to Infocus. Infocus is a personalized news alert, which provides very focused information on databases, software, tools, trials, events based on users' personal interests and field. https://infozentrum.ethz.ch/infocus

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ISSN Database: https://portal.issn.org/
EZB (Electronic Library Regensburg): https://ezb.uni-regensburg.de
CASSI (resolving journal abbreviations): https://cassi.cas.org/search.jsp
Worldcat (not only for journals: www.worldcat.org
Directory of Open Access Journals: www.doaj.org
Directory of Open Access Books: www.doabooks.org
Website Plan S: https://www.coalition-s.org/

Remember: There is a **tools** and **database directory** with advanced filtering options on the Chemistry | Biology | Pharmacy Information Center's website at
https://infozentrum.ethz.ch/en/databases-tools/databases
https://infozentrum.ethz.ch/en/databases-tools/tools

Keep in Mind

Where to check to see if there is an Open Access mandate at your research Institution?
ROARMAP https://roarmap.eprints.org/

Where to check what you are allowed to do with your journal article in terms of Green Open Access: Sherpa/Romeo https://v2.sherpa.ac.uk/romeo/

Where to upload your Green OA article (author copy, not publisher PDF):
As an ETH Zurich researcher: Research Collection: www.research-collection.ethz.ch
As a University of Zurich researcher: https://www.zora.uzh.ch/

Information on Open Access Funding at ETH Zurich: https://library.ethz.ch/en/publishing-and-archiving/publishing-and-registering/publishing-in-open-access-journals.html
and
https://documentation.library.ethz.ch/display/OA/APC+Funding

Important Definitions

ISSN is **the** identifier for a journal
APCs are Article Processing Charges or fees
Green Open Access: Self archiving, no APCs, everyone can read (after embargo)
Golden Open Access: APCs, everyone can read
Diamond Open Access: No APCS, everyone can read
Bronze Open Access: Everyone can read, no reuse
Black Open Access: Free access through a dark, unknown system, like SciHub
Hybrid Journal: Uses both traditional and Open Access business models, is not considered "pure" OA, those journals often do not qualify for funders that foster Open Access

1

2

Summary Sheet

07 Tools for analyzing & managing information & knowledge (4.11.2020)

To Do's

Think about a **reference management system** (if you don't already use one). To make an informed choice, you may want to use the Reference Management Software Comparison Guide – 8th Edition – by the Technical University of Munich (see important links below).

Think about an **alternative to a paper-based lab notebook**, an **electronic lab notebook (ELN)**. There is ETH Zurichs's data management tool OpenBIS, developed by IT Services of IT Zurich, which is basically free, and Signals, which comes free with the ChemDraw package of ETH Zurich's IT-Shop. Go to Perkin Elmer's Site Subscription Page https://t1p.de/r27k. Register with your top-level e-mail USERNAME@ethz.ch. If you have any questions on ELNs, please contact Dr. Leo Betschart. If you can read German, you may also use the ELN-Wegweiser by ZB Med in Germany (see important links).

Stay tuned – Journal Alerts

Decide on the limited set of journals which you want to read, i.e. to receive eToCs (electronic Table of Contents), and register for the free eTocs, or, alternatively and **recommende**d, **build your personal library using mobile app Browzine.** BrowZine can be used as a web application for laptops/PCs or as an app on mobile devices. In order to access BrowZine you need to be in ETH Zurich's network. You can read, however, downloaded articles offine.
Instructions for mobile devices: Search for BrowZine in the app store (Apple, Google or Amazon) and download the application for free. Once you open the app, a list of libraries will appear. Select "ETH Library"'" and click on "Continue". You can read articles also offline. More information on ETH Library's website: https://library.ethz.ch/standorte-und-medien/medientypen/zeitschriften-zeitungen/browzine.html

Stay tuned – Journal Articles

If not yet done: Decide on the literature database (Scopus recommended, depending on your field Qinsight or another database might be (also) useful) and a limited set of **topics.**
If not yet done: Decide a limited set of publications and authors you want to receive **citation/publishing alerts.**

Think about a **knowledge management system** for your group (see Keep in Mind below)

Give **Scholarcy and Scite** a try. For a free, extended trial register through the Doodle https://doodle.com/poll/ygfb4sfpwt6nxbbn?utm_source=poll&utm_medium=link. The link has been sent though the e-mail communication **#010 Course 529-0195-00 SIRMLSC.**
Using **Scite**, you can use AI to evaluate scientific articles via Smart citations. Watch their videos on YouTube, starting with https://www.youtube.com/watch?v=P5J9EgAaai4
Using **Scholarcy**, you can use AI to generate summaries of articles, also for importing them into your reference management system, and to generate lay summary of any article or manuscript for news, proposals and more. Watch their videos on YouTube, starting with https://www.youtube.com/watch?v=6V_PSfPVK2U&t=24.

Important Links

Reference Management Software Comparison – 8th Update (June 2020):
https://mediatum.ub.tum.de/doc/1320978/1320978.pdf
ELN-Wegweiser by ZB Med: https://www.publisso.de/forschungsdatenmanagement/fd-dokumentieren/eln-wegweiser/
Google Alerts: www.google.com/alerts
Browzine, the app for your personal digital journal library: https://browzine.com
KNIME: https://www.knime.com/ and https://www.knime.com/learning-hub
Scholarcy: www.scholarcy.com
- Flashcard generator: https://app.scholarcy.com/flashcard-generator.html
- Chrome extension: https://chrome.google.com/webstore/detail/scholarcy-research-paper/oekgknkmgmaehhpegfeioenikocgbcib
- Smart summaries: https://summarizer.scholarcy.com/
Scite: https://scite.ai/
Pipeline Pilot: https://www.3dsbiovia.com/products/collaborative-science/biovia-pipeline-pilot/
Recommended book: Open source software in life science research: practical solutions in the pharmaceutical industry and beyond. ed. by Lee Harland and Mark Forster. Online at http://www.sciencedirect.com/science/article/pii/B9781907568978500011

Keep in Mind

ETH Zurich provides access to three **reference management systems** through the **IT Store: Endnote, Papers** and **Bookends.** In addition, there is a university license for the free reference management system **Mendeley,** which gives you more features and more storage space – provided you use your ETH e-mail address.
Pipelining Tools like **KNIME** (open source) or Pipeline Pilot (commercial) can help you to create automatic workflow retrieving, managing, analyzing, sorting, filtering, merging and visualizing scientific data and information.

For organizing your group **internal knowledge management**, there are several systems available at ETH Zurich:
- SharePoint
- Yammer
- WordPress

In addition, you can use also free wiki software tools. If interested, contact Dr. Oliver Renn.

Oliver Renn, ICBP, ETH Zürich 2020
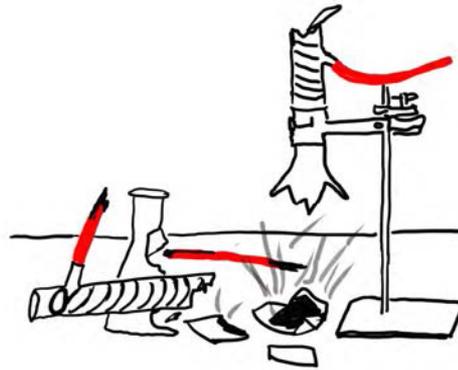
Road Rage

Extreme anger generated from a traffic incident or accident that leads to an assault with a motor vehicle or other dangerous weapon by the operator or passenger(s) of one motor vehicle on the operator or passenger(s) of another motor vehicle.
Parent Heading: Automobile Driving
Parent Heading: Dangerous Behavior
Parent Heading: Rage
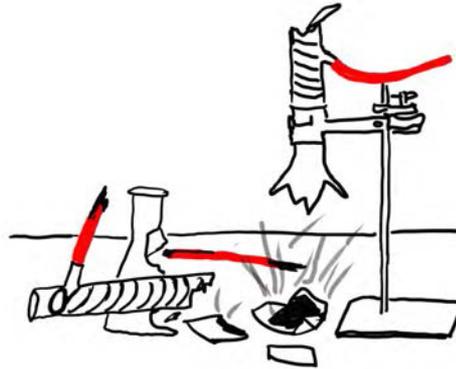
Negative Results

Subject matter related to research studies in which the data do not demonstrate any clear evidence of effect, especially if an effect was expected.
Parent Heading: Data Collection

Sadness

Feeling or showing sorrow; the sense of being unhappy. It is related to DEPRESSION but is not synonymous.
Parent Heading: Emotions

Task 1

Search for the Patent

US9346394B1

using Google Patents, Google and Espacenet!

1. How many pages does the patent have?
2. **What is unusual in that patent?**
   Why could it be an often mentioned patent?

7

318 in FIG. **3**C; and, trailer plug
for example, shows an auxiliary
electrically connect to (plug into)
G. **3**D. The auxiliary plug **400** can
connect to (plug into) any trailer 5
l judgment of a person of skill in

IGS. **4**, **6** and **10**-**11**, the opposite
may, in some embodiments, elec-
o) a controller **600**. Alternatively, 10
ire bundle **402** may connect to
connect to the controller **600**. In
controller is not required and the
nnected directly to the auxiliary
controller **600** will be discussed 15
ndle **402** may be secured to the
sen with the sound judgment of a
ccording to one embodiment, the
d under the chassis **1000** of the
from the rear of the vehicle to the 20
it can terminate at or near the
ccording to another embodiment,
minate at the front of the vehicle

8

is maintained within the vehicle so that the vehicle's driver
can also operate the implement **100**. Such a device **406** may
be used, for example, to operate functions such as to raise and
lower the snow plow and/or turn a salt spreader system on and
off. FIG. **1**B, for example, shows a spreader **460** including
auxiliary lights **462** that may be use the wiring harnesses to be
described along with trailer plug **202** (or an alternate electric
plug). In some embodiments, a sensor **408** may be operable to
turn off the auxiliary light **104** when the vehicle lights are
turned off. The operation of sensor **408** may be in any manner
chosen with the sound judgment of a person of skill in the art.
In one embodiment, the sensor **408** works with a micropro-
cessor described elsewhere in this patent. In another embodi-
ment the sensor **408** works with a relay in a known manner
I'm sorry babe, but I may actually have to be here late. I've got
to get this patent application filed today. Thankfully, Traci is
willing to stay late to help me get it done.

A first wiring harness **416**, shown in FIG. **15**, may include:
a first electrical connector **418** that may be a power connector;
a second electrical connector **420** that may be electrically
connectable to at least one of the auxiliary lights **104**; a third
electrical connector **422** that may be electrically hardwire
connectable to the auxiliary implement **100**; and, a fourth

Task 2

"Advanced" Search in Espacenet

You want to find patents on devices that open wine bottles, but also cool the open wine bottle.

How would you search using the Classification Search?

Basics in Design

Oliver Renn
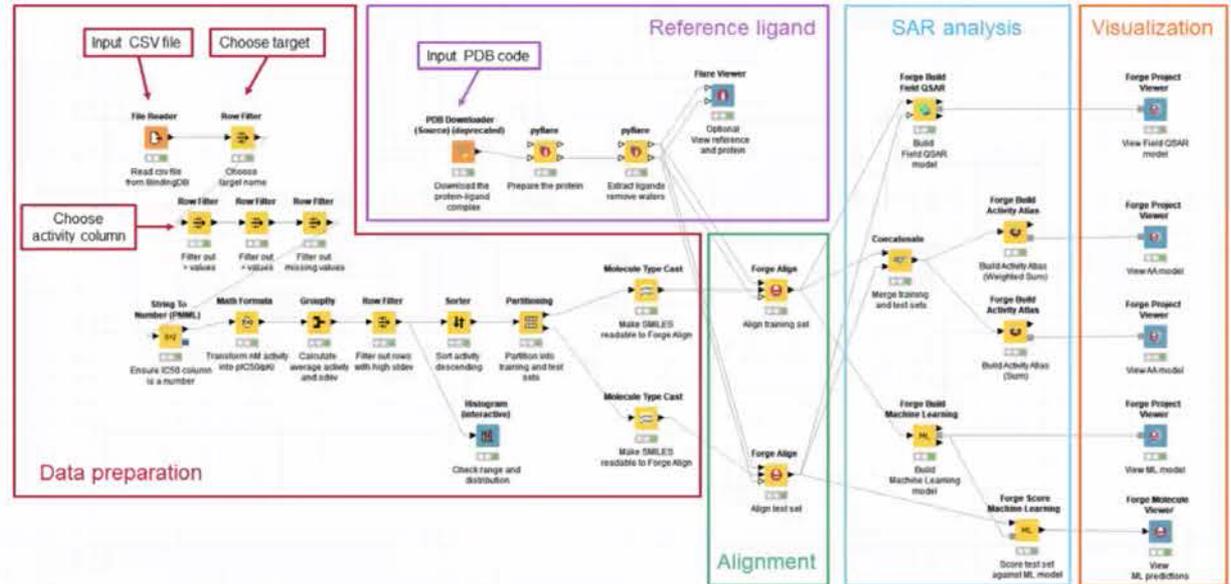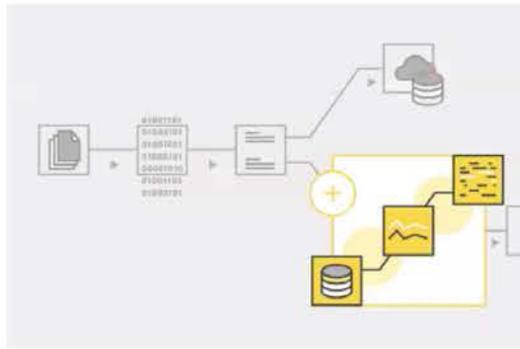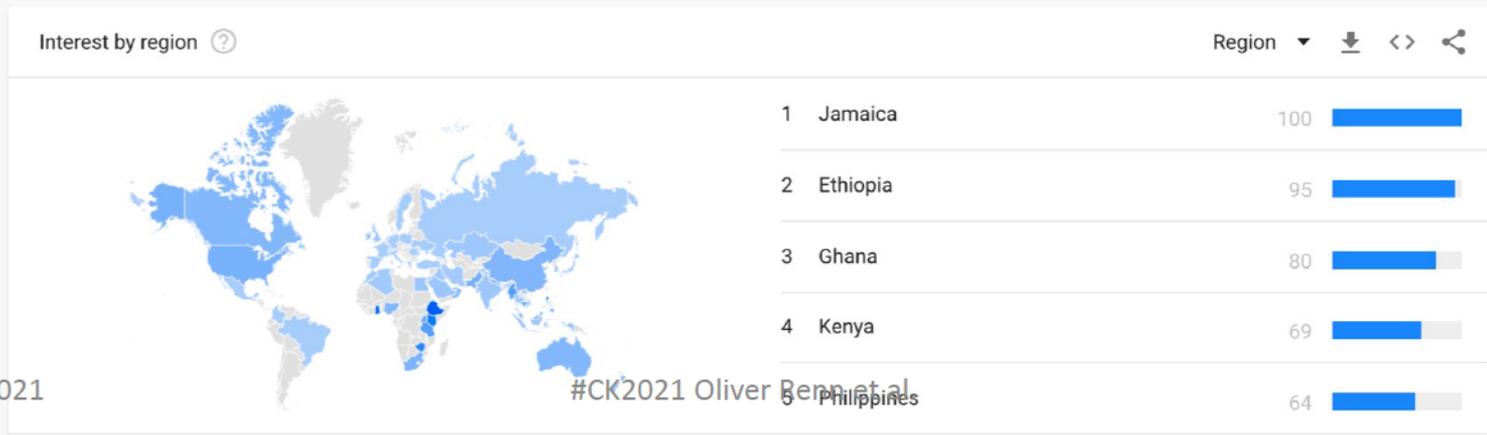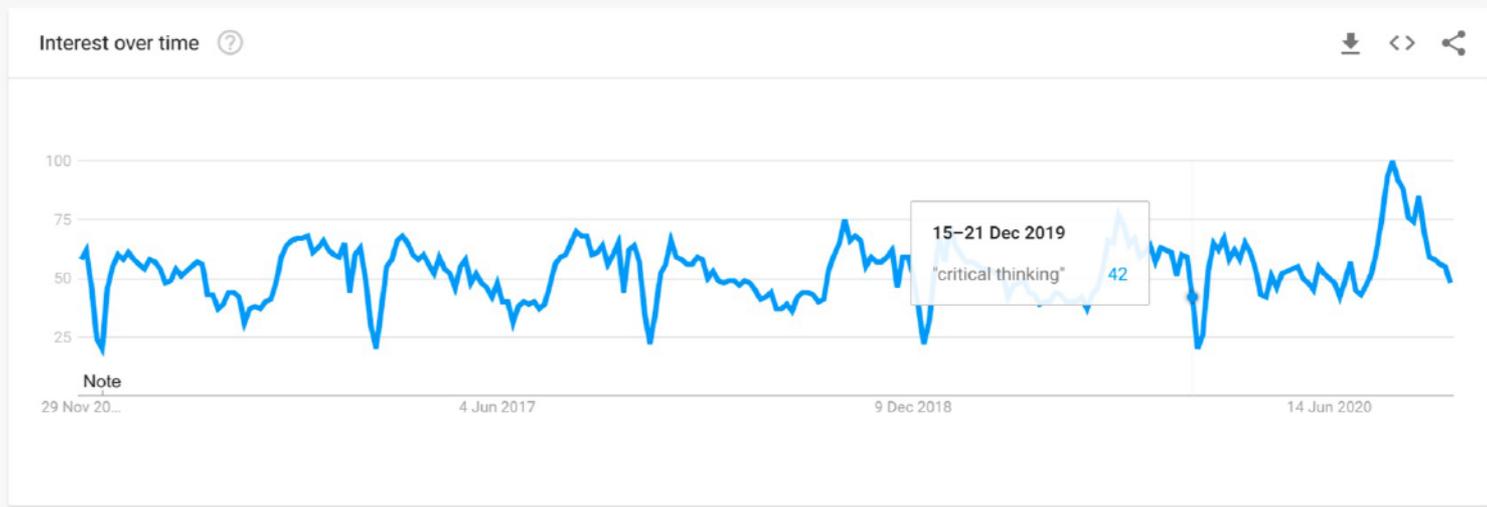
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Linguamatics
an IQVIA company

Reformat HTML as in producing Results with links → More options ›

Results Found 3 assertions from 6 hits in 6 docs. Examined all 49832 docs in parallel. [more details] View

Chemical	Sentiment	#Docs	Doc	#Hits	Hit
Remdesivir	+	3	10.1016/S0166-3542(16)30064-X	1	Pauline's experience certainly adds information about the drug's safety and leaves open the possibility that GS-5734 is an effective therapy for Ebola survivors with late-onset symptoms.
			10.1016/j.mjafi.2020.05.005	1	16–21 Remdesivir was used for successful treatment of the first COVID-19 case of the US.
			10.1016/j.biochi.2020.09.003	1	To date, there is no vaccine and only the antiviral prodrug Remdesivir has been approved as an effective drug therapy to treat the disease [4,5].
	-	2	10.1016/S0140-6736(20)31022-9	1	Three patients in the remdesivir group did not start their assigned treatment so were not included in safety analyses (figure 1).
			10.1016/j.jiph.2020.07.004	1	Remdesivir has not yet been approved for antiviral therapy and is currently used for the phase III clinical trial of COVID-19 in China.
	+/-	1	10.1016/j.onehlt.2020.100128	1	Results of the clinical trials currently underway in the U.S. and China will provide crucial information about whether remdesivir represents a viable treatment option for COVID-19 [20,49].

Class 1 affects Class 2

Class 1 affects Class 2 via a known relationship (does not include Class1 is affected by Class 2)

Class1 Restore default
Pharmacologic Substance

Class1 Class2 Reln Restore default
Chemical Disease

Class2 Restore default
COVID-19

Restore all defaults

Description

Finds relationships between Class1 and Class2. This only considers the single direction where Class1 affects Class2, and does not include Class1 being affected by Class2. The "Class1 Class2 Reln" slot supplies the relationship from Class1 to Class2.

A typical usage is where Class1 and Class2 are identical classes, and only one direction of relationship is required e.g. to find all gene-gene or company-company relationships to be viewed using a network visualizer.

Rather than generating "Company A bought Company B" and "Company B is bou Company A" this query outputs only the former, providing a single link in the graph.

Query Properties

Title: Class 1 affects Class 2

☑ Use in smart query

Summary

Class 1 affects Class 2 via a known relationship (does not include Class1 is affected by Class 2)

Description

Finds relationships between Class direction where Class1 affects Cl affected by Class2. The "Class1 C from Class1 to Class2.

A typical usage is where Class1 a one direction of relationship is company-company relationships to

her than generating "Company A pany A" this query outputs onl the graph.

009-2018 Linguamatics Ltd.

ted by   Linguamatics
ted   2018-02-15 15:40:32
2e version 6.1

ments

Updated: 2018-02-15

Chat

Von Georgios Makris zu Alle   5:03 PM
So far it is working for me

Von Ales Holfeld zu Alle   5:03 PM
Same here

covid-19

More than 29 results found
PTs/Synonyms in Ontology
COVID-19 in Diseases and S...
COVID-19 in MeSH
SARS Coronavirus 2 Infectio... syn. COVID-19
severe acute respiratory synd... syn. COVID-19 virus
SARS Coronavirus 2 in NCI ... syn. COVID-19 Virus
SARS-CoV-2 in Coronavirus ...

Chemicals (ChEBI 187)
Context Terms
Coronavirus Diseases & Infections
Coronavirus Species
Coronavirus Species, Diseases & Inf
Date
Diseases and Symptoms (derived fr
    Diseases and Disorders
        Infections
            Virus Diseases
                Pneumonia, Viral
                    COVID-19
                    more ... Pneumonia, Viral
                more ... Virus Diseases
            more ... Infections
        more ... Diseases and Disorders
    more ... Diseases and Symptoms (deriv
Drug Lab Code
Duration & Frequency (dosage)
Genes/Proteins (Entrez Gene+Unipr
Human Phenotype Derived 2020-03-
Measurements
MeSH 2020
Mutation
NCI Derived 20.04d

We want to maximize to quality and

the value of the course.

Every year.

A Smart Course.

Information on the Mandatory Essay of the 2020 Course "Scientific Information Retrieval & Management in Life Sciences and Chemistry"

Choose any of the three options outlined below and submit your work by **January 14, 2021**. For each option, write about **4000 to 6000 characters** (including spaces). **Send your essay to** renn@chem.ethz.ch **as a PDF file**. Please name the file as follows:
2020_Essay_Option_X_Lastname_Firstname.pdf.
For X, insert 1, 2 or 3 – depending on what option you choose. On the first page, write your name, your department and the title of your option (see below):

> **John Doe, D-ABCD**
> **Option 1: Shortly describe your current information workflow.**
>
> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean luctus orci a lobortis pellentesque. Proin eget augue scelerisque, pretium sapien quis, sollicitudin urna.

Option 1: Shortly describe your current information workflow.

Provide a **rough overview** of how you manage your scientific information and describe a walk-through of your information life-cycle process. Tell us about the software, tools and databases that help you to get through everyday life and how the course impacted this. Do you use databases or tools that are not listed on our website at "Databases" or "Tools"? When writing, consider the following steps of the research cycle:

- *Information Retrieval*
- *Updates/Alerts*
- *Literature Management*
- *Information Aggregation & Analysis*
- *Lab Notebooks/Note Keeping*
- *Data Processing*
- *Writing/Publishing*
- *Presenting/Promoting*

Begin by giving a **three-sentence-summary of your research**, so that we can better understand your perspective. Towards the end of your essay, **analyze** the aspects you would most like to improve upon. **Reflect** on the content of the course and try to **suggest** possible improvements for your personal information workflow.

Option 2: Describe your met information needs

Did you learn about a new tool, a new database or a new software in this course, and did you start successfully using it? Tell us how this tool, database or software made an impact on your research or related work and how the course impacted this. Begin by giving a **three-sentence-summary of your research**, so that we can better understand your perspective.

Option 3: Describe your unmet information needs

Tell us about your still unmet needs when dealing with scientific information or data. What would you love being able to do, but – to your knowledge – there is no way to address this specific challenge. Begin by giving a **three-sentence-summary of your research**, so that we can better understand your perspective. When describing the unmet needs, please provide specific details of the problem(s).

Option 1: Shortly describe your current information workflow.

Provide a **rough overview** of how you manage your scientific information and describe a walk-through of your information life-cycle process. Tell us about the software, tools and databases that help you to get through everyday life and how the course impacted this. Do you use databases or tools that are not listed on our website at "Databases" or "Tools"?

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Before I joined this course, I only searched for literature in pubmed and google scholar. I did not know about / did not bother about advanced search options, which yielded in a way better throughput of relevant searches of the compounds of interest and how those

Before taking this course, I was not aware of the wide variety of tools and databases available and it seemed a bit like a jungle to me. I had a very basic way of searching for information and managing my references, mostly printing out interesting papers and having a pile next to my desk that I basically never read entirely. In order to be a bit more efficient and ecologic

In the SIRMLC course, I learned some extremely valuable new tools for analyzing and managing information and knowledge. Until now, I had a rather old school way of organizing my

At the beginning of my PhD program, I spent much of my time on Google or PubMed to gather information for protein expression and purification strategy. While I consider myself a proficient user of search engines, the PubMed tips for expert searchers tutorial was very useful as it introduced me to PubMed search based on pharmacological action item. This

probably missing out on many publications of interest. To overcome this issue, another tool, which for me personally was the highlight of this course, was Artificial Intelligence-based search tools. One of them is Qinsight and it offers considerably more results than PubMed, by using neural networks and machine learning and it also retrieves information from patents, grants and clinical trials. For the same query as

Once I have obtained my data, I analyze it using python (via Anaconda/Spyder). Nevertheless, I am very interested to incorporate the data processing pipeline presented by Joachim Schnabel using KNIME to process my HPLC data. This lecture by Joachim Schnabel was particularly helpful for my work as I use a similar HPLC-UV instrument as the one he uses in his work, so even details such as "beware of the UTC-16" file format have recently been helpful for me when I process my HPLC data.

In the past, I have primarily relied on web of science and google scholar whenever I have needed to find scientific articles. Now I also employ Scopus, after learning about it in this course. Previously, I have used PubChem, NIST, or the CRC Handbook of Chemistry and Physics whenever I have required data on the chemical properties of certain reagents I use. Lecture 6 of this course was highly useful for me, as it introduced me to several databases that I look forward to employing. I am particularly excited to use KnowItAll AnyWare to find reference spectra for my FTIR, GC/MS, and other spectroscopy I may use in the future to characterize the organic matter in my samples.
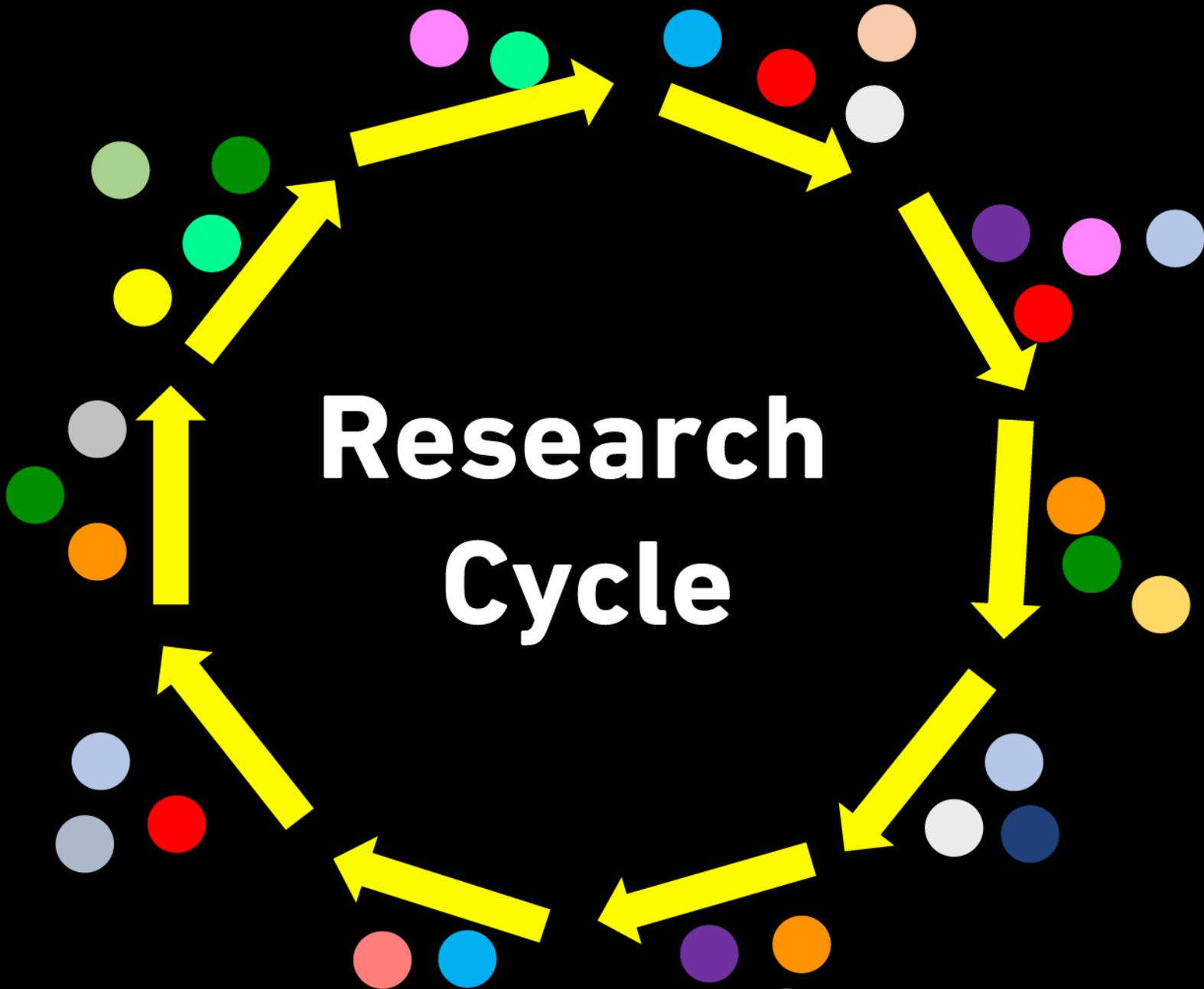
By and large, I think that the course helped me reflect on parts of my information retrieval workflow as well as enriched it with new tools. Points on which I see room for improvement is in my workflow is to finetune my alerts and news feeds, as I'm currently making little use of them. Furthermore, I have not yet made much use of guidelines and regulations for publishing. Lastly, there are many more things to do and explore for promoting my research, which I will try to include as a further step in my research pipeline.
A database that I used in my project so far, but which I did not see in the Infozentrum Database list is **JGI IMG** (https://img.jgi.doe.gov) for microbial genome and microbiomes, **Pangea** for georeferenced data (https://www.pangaea.de/about/), and I am very fascinated by the data richness of **BacDive** for bacterial metadata (https://bacdive.dsmz.de).
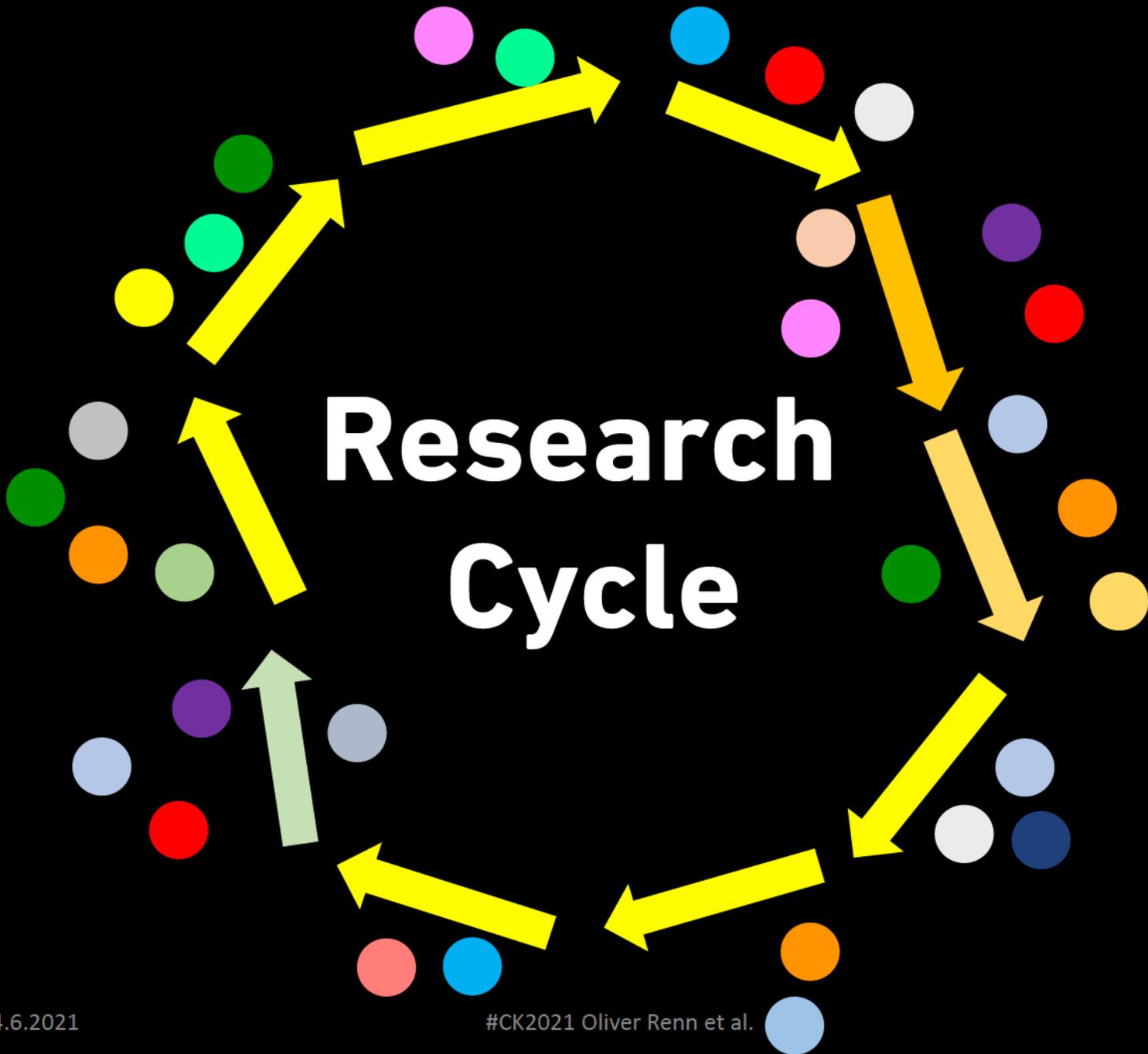
I think 2020 has proven that web-based science has become essential to most of us. I am grateful that within the course you introduced us to various tools, simplifying the search and management of the enormous amount of information available. Who knows, soon to come might be the "MethodMiner" to further extend and enhance our experimental horizon.

It was very helpful for me to have the courses recorded and to have the recordings available later on! It allowed me to watch the lectures I could not attend and I did not miss any information. I prefer to attend lectures in person, but since I am located in Basel, it was impossible for me to come to Zurich for the lectures. I was glad the course was online so I could benefit from it even though I could not be present in the lecture hall.

I greatly enjoyed the course and the online lectures – as mentioned above this made it easier for me to follow the course even when experiments made attending the Wednesday lecture/live stream difficult.

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Research Cycle

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Coffee Lectures: The 23rd series!

Published: *19.05.2021*

At the end of the summer semester 2021, we are launching the 23rd series of our Coffee Lecture, again with a mix of various topics.

Newsletter Infozine: Subscribe for free

Events   > Overview

Tu, **15.** Jun

Basics in design in just 10 minutes (No. 25)

Type of Event: *Coffee Lecture*
Language: *English , German*
Time: *13:00–13:10*
Place: *https://ethz.zoom.us/j/66375659540*

If you stick with the basic principles of typography and design, your text, brochure, flyer or poster will not only get noticed more than others but will also be more easily read.

Advertisment is still needed.

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Lab hours	Lab hours
0 ECTS	**2** ECTS ✔

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5. Tools for sharing scientific information ✔
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9. Scientific writing ✔
10. Outreach and research metrics ✔

D CHAB / D BIOL

www.infozentrum.ethz.ch

What PhD students say

«Resulted in a much more efficient use of my time»

«Perfect overview on what a PhD student should know»

«Keeps me ahead of the current state of art in my field»

«Immediately impacted my research»

«How little things can change your PhD life»

Lecturers
Dr. Oliver Renn, Dr. Jozica Dolenc,
Dr. Leo Betschart, Dr. Joachim Schnabl

Department of Chemistry and Applied Biosciences
Vladimir-Prelog-Weg 10
8093 Zurich
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more information about the course here: u.ethz.ch/O7y3L or scan the QR-code on the left.

Sign up for the course 529-0195-00L at mystudies.ethz.ch

D CHAB / D BIOL

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Information savvy – with Course 529-0195-00

1.394 Aufrufe • 06.09.2016

👍 7   👎 1   → TEILEN   ≡+ SPEICHERN   ...

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24.600 Abonnenten

ABONNIEREN

Get „information" savvy – by taking the course Scientific Information Retrieval & Management in Life Sciences and Chemistry.

MEHR ANSEHEN

F7 What did you like most about the course?

| 11	Very interesting and useful, but would be more useful during the masters program	1/11/2021 12:58 PM
12	Many useful tips, tools and filters were demonstrated. The way of presenting and sense of humour.	1/11/2021 12:38 PM
13	Simple and great insight on retrieving information	1/6/2021 3:22 PM
14	Quite broad so that many topics around information retrieval were covered. Also trying out the hints during the lecture was helpful to better remember.	12/23/2020 6:35 PM
15	Hands on, very relatably teached and useful.	12/20/2020 4:13 PM
16	Very interesting examples and tools	12/18/2020 3:15 PM
17	The course is not only very intersting and informative but also the lectures are entertaining and stimulate to try out new tools.	12/17/2020 10:14 AM
18	the variety of different tools that was shown	12/16/2020 9:36 AM
19	For topics, I liked the diversity. Especially the database tutorials.	12/16/2020 8:45 AM
20	learning new things about the scientific world	12/16/2020 8:14 AM
21	The presentation of many different tools for managing literature and infos.	12/15/2020 8:24 PM
22	The course is very broad but it give a good base/starting point in all topic covered.	12/15/2020 7:23 PM
23	Great overview of "productivity tools/hacks" to maximise the ability to keep track of scientific information. I am trying to implement where possible some of the tools introduced, and I am quite happy with the outcome so far. All lecturers seemed genuinely interested in providing value to the students.	12/15/2020 6:34 PM
24	Breadth of topics covered, info on scientific publishing	12/15/2020 6:10 PM

F8 And what did you like less?

|		
8	I wanted to have one course in presence, not online. I therefore stopped attending after everything got online due to the COVID restrictions.	1/11/2021 12:35 PM
9	Some times presenting or testing sites live led to waiting times (server not loading, slow internet etc.) which delayed the flow. However it was also helpful and illustrative so that I would not abandon (backup slides in case it does not work might be helpful). (the live lectures with reaxys worked well) I also had the feeling some parts were slow and some fast/short-cut but I will not go into detail as I think this is too much related to what background one has.	12/23/2020 6:35 PM
10	Some of it was a bit useless, like showing google scholar basic functions...	12/20/2020 4:13 PM
11	too many slides with a screenshots	12/16/2020 9:36 AM
12	The KIME lecture was a bit difficult for me to sit through.	12/16/2020 8:45 AM
13	Too much directed towards biology	12/16/2020 8:14 AM
14	Focus on chemistry was a bit too strong. Maybe next time better balance between life sciences and chemistry.	12/15/2020 8:24 PM
15	Chemistry is not my area of expertise so it was less interesting/usefull to me personaly.	12/15/2020 7:23 PM
16	In some lectures, the pace was quite high, as if a lot of information was being dumped (too many details).	12/15/2020 6:34 PM
17	Focused rather a lot on chemistry	12/15/2020 6:10 PM

„How little things can change your PhD life"

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No. of students in the course

Scientific Information Retrieval & Management in Life Sciences and Chemistry

Student → **Professional**

ICT Skills

Knowledge

information-savvy
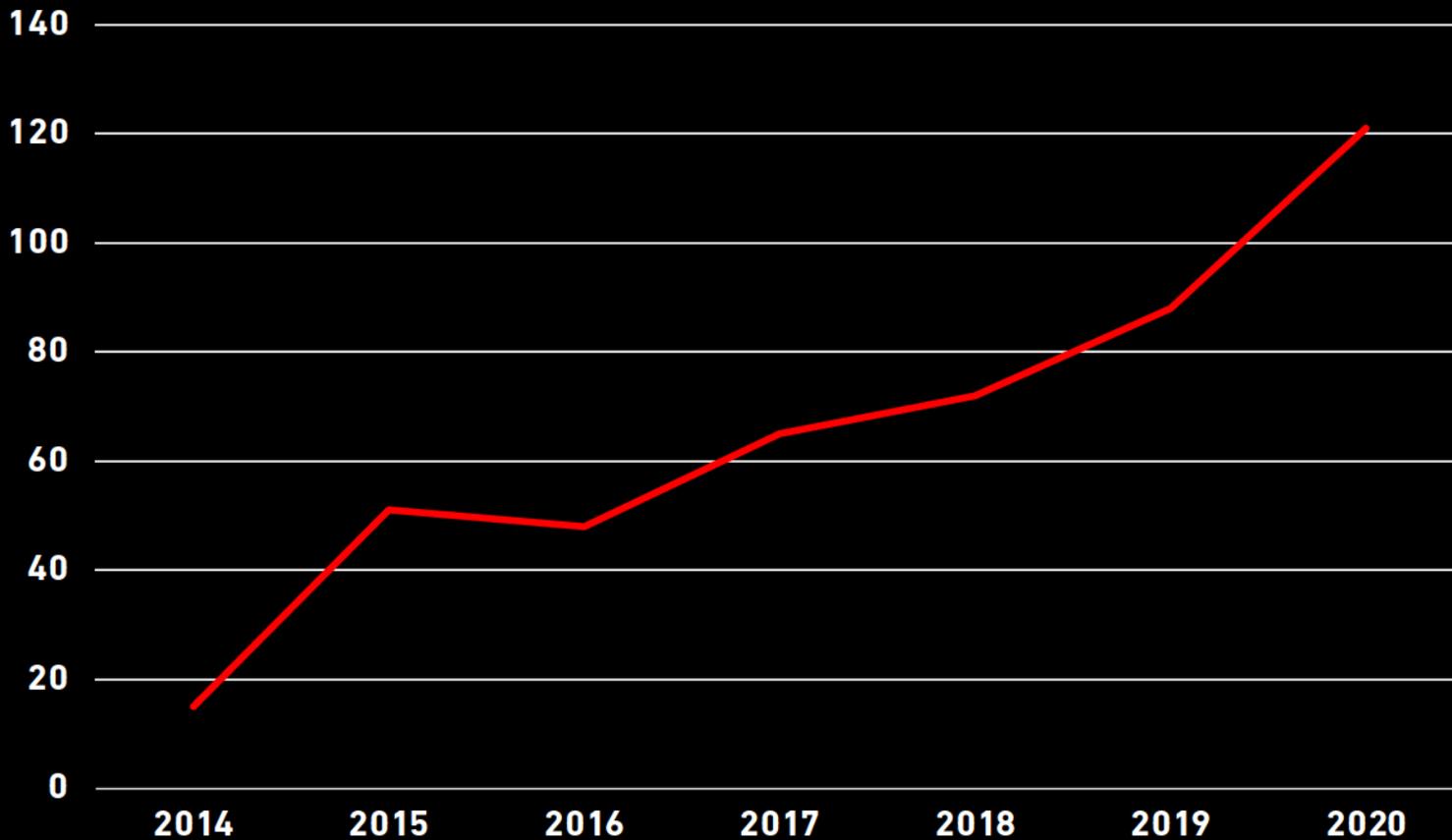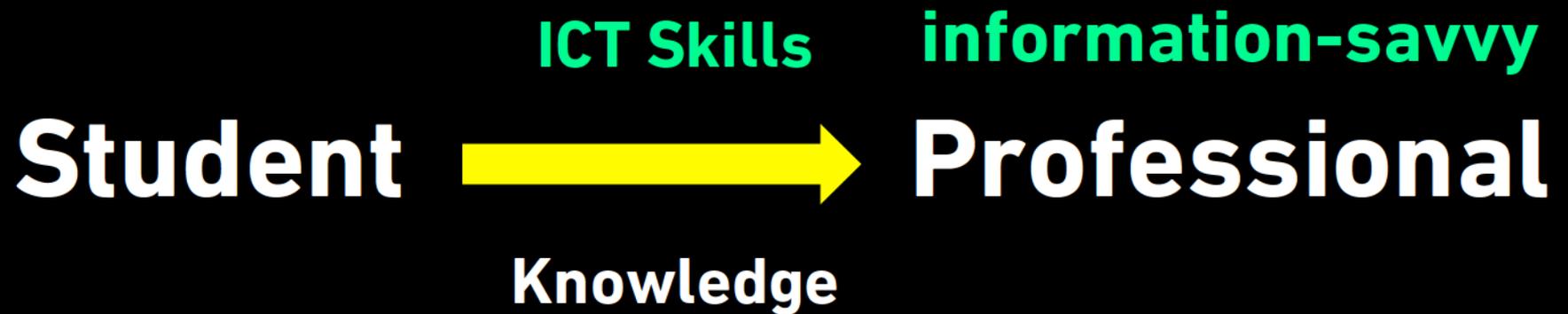
Questions?

Oliver Renn

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