How to make research more visible?

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University of Oslo Library

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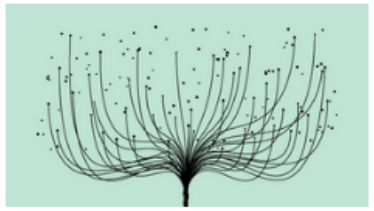
Open and reproducible research courses

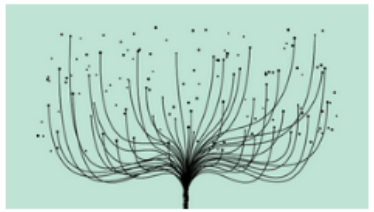
Sep 8th – 20th 2023



Time and place: Sep. 8, 2023 10:00 AM – 11:00 AM, Zoom

Open and reproducible research: An overview

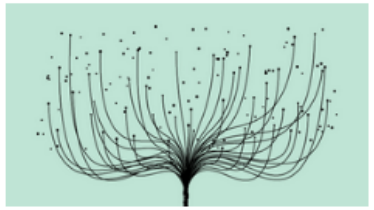
Learn about what open research is and how to make your own research more transparent and reproducible.



Time and place: Sep. 13, 2023 9:00 AM – 11:00 AM, Zoom

How to preregister research studies?

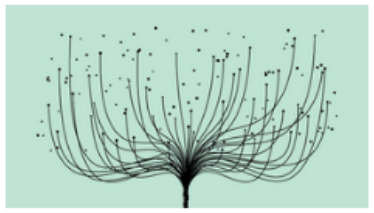
Learn about what preregistration is and how to preregister your own studies.



Time and place: Sep. 15, 2023 10:00 AM – 11:00 AM, Zoom

How to make research reproducible?

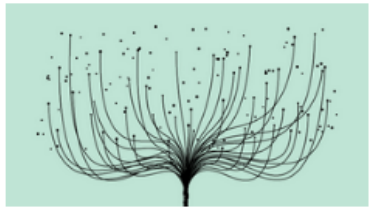
Learn about tools and practices for more reproducible and effective research.



Time and place: Sep. 18, 2023 10:00 AM – 11:30 AM, Zoom

How to publish openly?

Learn about preprints, peer-review process, Open Access and how can you choose the best way to publish your results openly.



Time and place: Sep. 20, 2023 10:00 AM – 11:30 AM, Zoom

How to make research more visible?

Learn about different tools, platforms and services to share your research and other contributions, and how you utilise them to make yourself and your work more visible to the academic community and the society at large.

https://www.ub.uio.no/english/courses-events/courses/other/research-reproducibility/

Roadmap

- Bibliometric indicators
- Altmetrics
- Future of bibliometric indicators and researcher evaluation
- Unique identifiers for researchers: ORCID
- Visibility services and social media (SoMe) platforms
- Q&A time!

Researcher visibility

- Research(er) impact
  - Bibliometrics
  - Altmetrics
- Researcher profiling
  - Identification
  - Visibility services

Bibliometric Indicators

Bibliometric indicators: What are they?

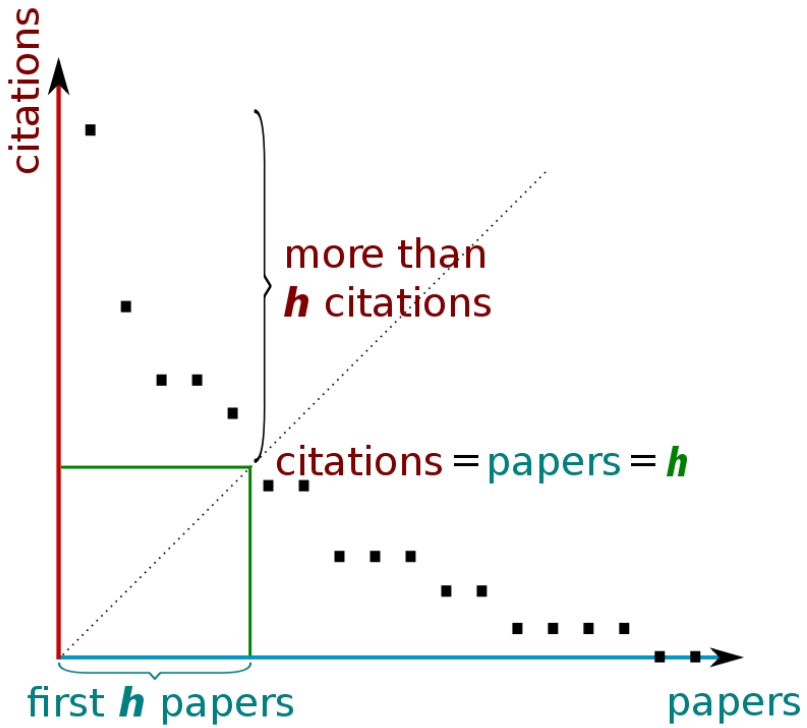
- They are statistics
- Examples: citations, number of publication, *h*-index, Journal Impact Factor
- Only as precise as data they are based on
- Take time to accure
- They have limitations we should be aware

https://www.uib.no/en/ub/130425/bibliometric-analysis#principles-for-responsible-use-of-bibliometrics-at-the-university-of-bergen-library
https://mitt.uib.no/courses/29468/pages/bibliometric-indicators-introduction?module_item_id=233188

Bibliometric indicators: Author-level metrics

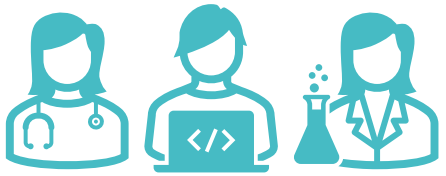
h-index, *h*I

- Defined as the maximum value of *h* such that the given author/journal has published at least *h* papers that have each been cited at least *h* times



https://en.wikipedia.org/wiki/H-index

Bibliometric indicators: Author-level metrics

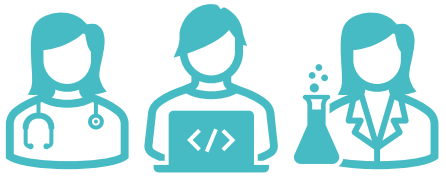


h-index, *h*I

- Limitations:
  - Affected by field
  - Varies between different sources
  - Increases with career length → unfair for ECR → Annual *h*-index
  - Based on citations → can be manipulated → Self-citation index

https://en.wikipedia.org/wiki/H-index

Bibliometric indicators: Author-level metrics

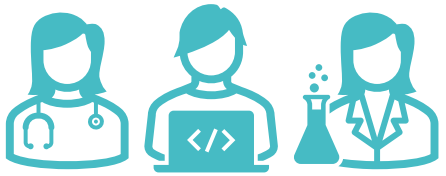


Annual *h*-index, *h*Ia

- hIa = hI,norm/academic age
  - hI,norm: normalized number of citations for each paper by dividing the number of citations by the number of authors for that paper, and then calculate the h-index of the normalized citation counts
  - academic age: number of years elapsed since first publication

https://harzing.com/publications/white-papers/from-h-index-to-hia

Bibliometric indicators: Author-level metrics



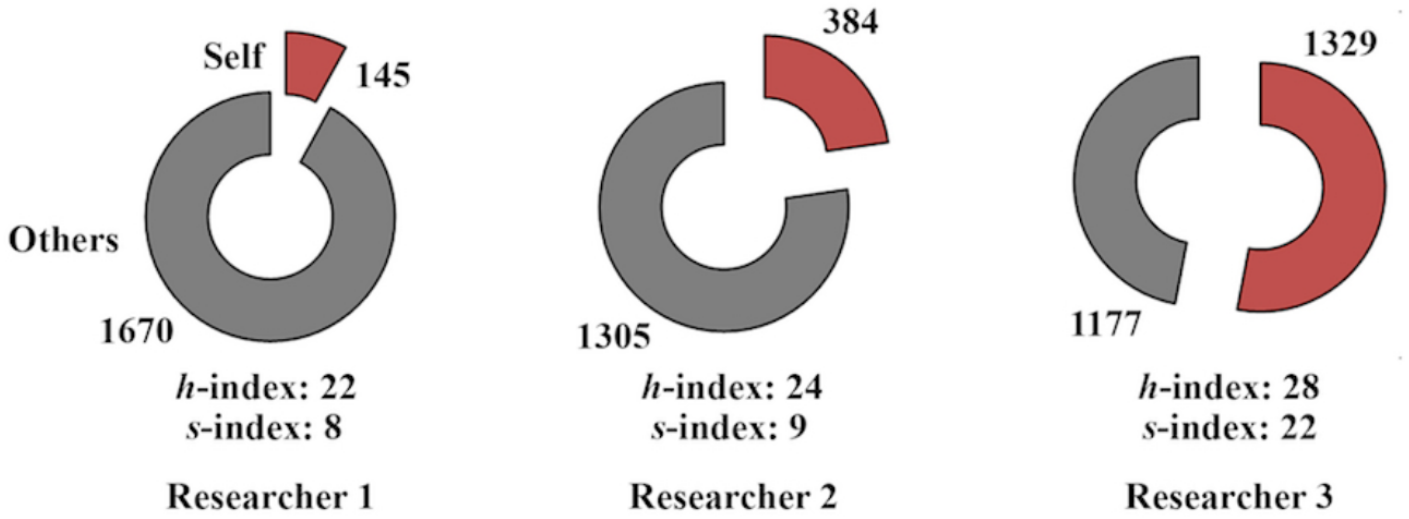
Self-citation index, *s*-index

"…A scientist has a self-citation index *s* equal to the total number of *s* papers that he or she has published that have at least the same amount of *s* self-citations.…"

https://pubs.aip.org/physicstoday/Online/5109/The-case-for-tracking-self-citations
https://www.mdpi.com/2304-6775/5/3/20/htm

Bibliometric indicators: Author-level metrics

Self-citation index, *s*-index



A snapshot of the citation habits of three physicists in the same field reveals the propensity of some scientists to cite themselves. Although the third researcher has the highest *h*-index, he or she also has more self-citations (red) than citations from other groups (gray). Including the *s*-index as an additional metric would provide important context.

- Limitation: Not all self-citation is the same! → Inflated self-citation vs. Necessary self-citation

https://pubs.aip.org/physicstoday/Online/5109/The-case-for-tracking-self-citations
https://www.mdpi.com/2304-6775/5/3/20/htm

Bibliometric indicators: Author-level metrics - Example

h-index in ***three different databases*** for Prof. Anne Spurkland (2023-09-19):

Web of Science Core Collection metrics

Citation counts are from Web of Science Core Collection.

Anne Spurkland

Web of Science ResearcherID: L-3369-2019

116	7,341	40
Publications in Web of Science	Sum of Times Cited	H-Index

This author profile is generated by Scopus. Learn more

Scopus

Spurkland, Anne

Medisinske Fakultet, Oslo, Norway 7005660842 https://orcid.org/0000-0003-4421-0766

8,609	143	44
Citations by *6,575 documents*	Documents	*h*-index View *h*-graph

Google Scholar

Anne S Spurkland

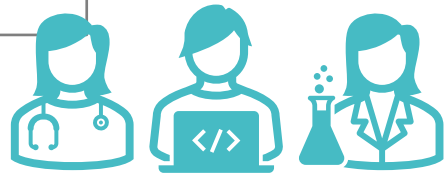
Professor of anatomy, University of Oslo
Verified email at ulrik.uio.no - Homepage
Immunology

FOLLOW

GET MY OWN PROFILE

TITLE	CITED BY	YEAR

Cited by	All	Since 2018
Citations	11726	4048
h-index	48	21
i10-index	99	40



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Bibliometric indicators: Article-level metrics

Citation counts

- They are also an author-level metrics
- They are measure of usage, but are sometimes used as proxies for “impact” or “quality”
- Can be found on databases and services such as Web of Science, Scopus, Google Scholar…

https://mitt.uib.no/courses/29468/pages/citations?module_item_id=233195

Bibliometric indicators: Article-level metrics

Citation counts

- Limitations:
  - They lack context → “positive” vs. ”negative” citations
  - Self-citations
  - Vary from source to source
  - Citation practices vary between research fields
  - They change with age of the publication
  - They are affected by biases, cultural or social factors
  - They tend to have a self-reinforcing effect

https://mitt.uib.no/courses/29468/pages/citations?module_item_id=233195

Bibliometric indicators: Journal-level metrics

Journal Impact Factor (JIF)

- Can be found in the Journal Citation Report from Clarivate
- It was designed to help with journal subscription management

Figure 1: Calculation for journal impact factor.

A= total cites in 1992

B= 1992 cites to articles published in 1990-91 (this is a subset of A)

C= number of articles published in 1990-91

D= B/C = 1992 impact factor

https://mitt.uib.no/courses/29468/pages/journal-level-metrics?module_item_id=233199
https://clarivate.com/essays/impact-factor/

Bibliometric indicators: Journal-level metrics

Journal Impact Factor (JIF)

- Limitations:
  - It is susceptible to manipulation via coercive citation practices
  - It is not comparable between fields
  - Wrong use of JIF to assess individual articles is problematic because citation rates vary within a journal

https://mitt.uib.no/courses/29468/pages/journal-level-metrics?module_item_id=233199

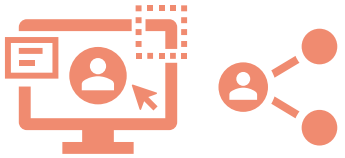
Research(er) impact

Bibliometrics

Altmetrics

Altmetrics

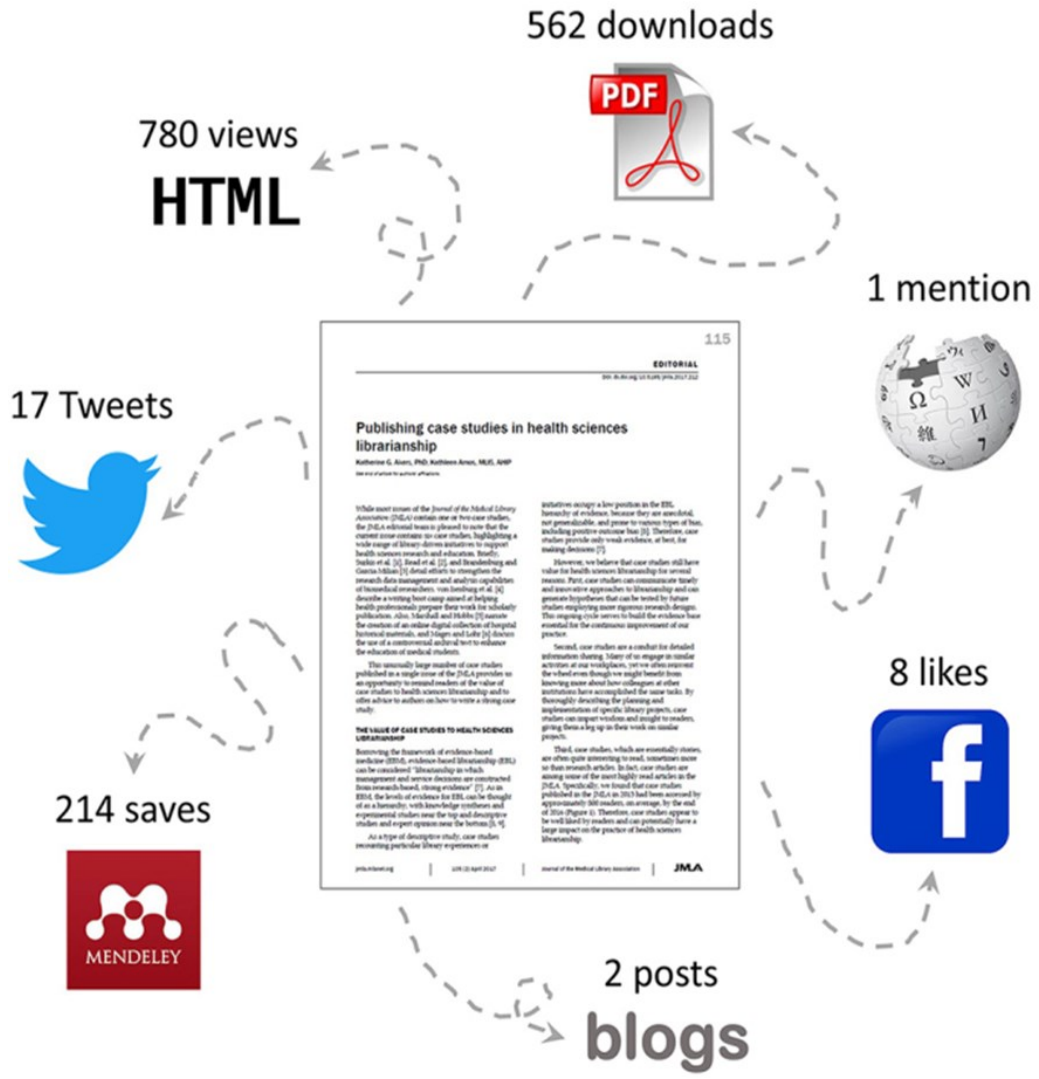
Altmetrics



- ***Alt***ernative ***metrics***
- Measure attention and indicate potential social, economic and cultural impact

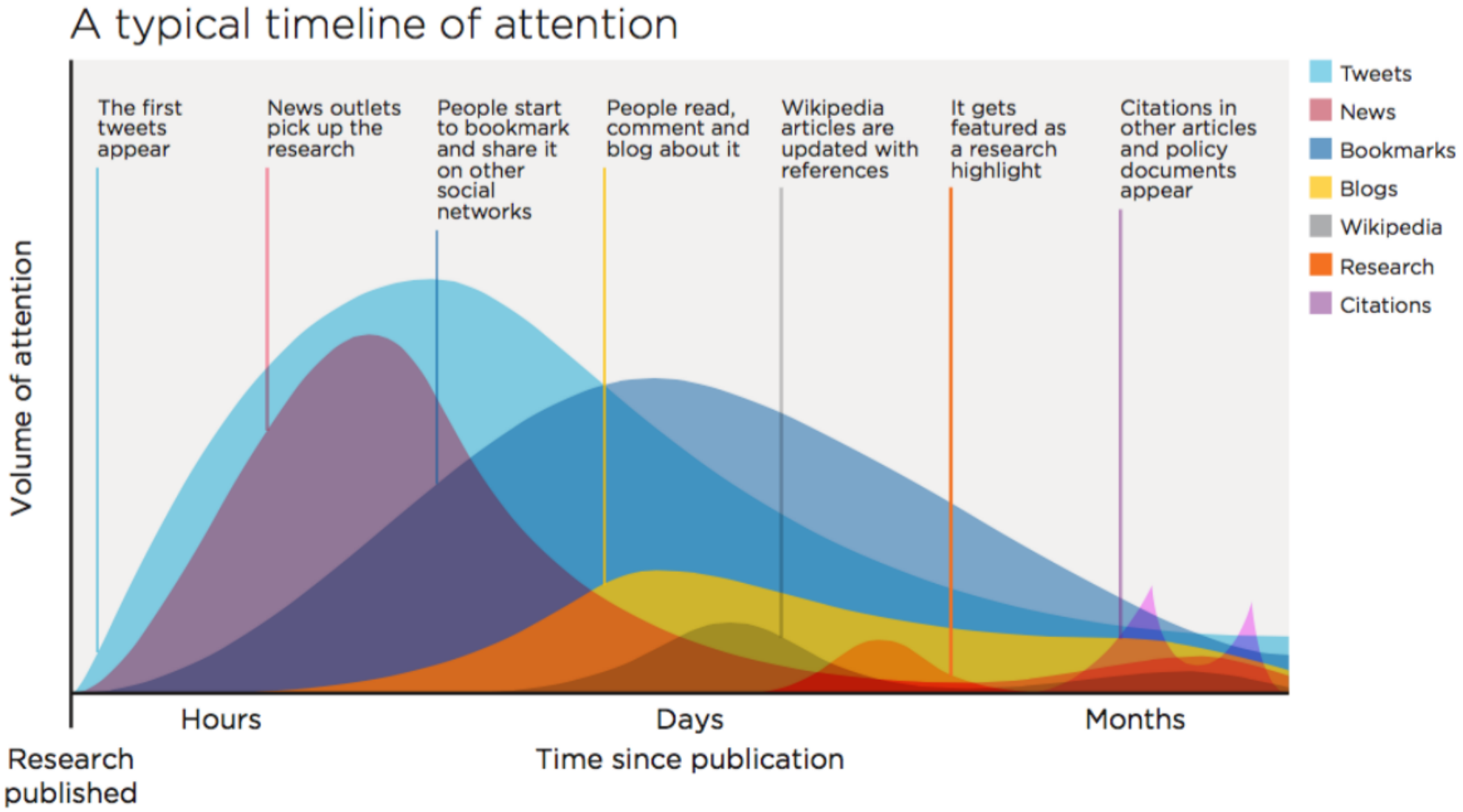
http://altmetrics.org/manifesto/

Altmetrics



https://jmla.pitt.edu/ojs/jmla/article/view/250/403

Altmetrics



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http://misc.altmetric.com.s3.amazonaws.com/materials/Altmetric%20for%20Publishers%20Intro%20Deck%20August%202018.pdf

Altmetrics

- ***Alt***ernative ***metrics***
- Measure attention and indicate potential social, economic and cultural impact

PRO	CON
Have an immediate impact	Potential for manipulation is high

http://altmetrics.org/manifesto/

Altmetrics

- Criticised:

Real world impact cannot be effectively reduced to a numerical ranking for a number of reasons:

- It's often subtle and non-obvious, requiring an explanation, rather than a yes/no tick box.
- It's slow, in many fields better measured in decades rather than months.
- It's widely variable, and there's no one standard measure that makes sense for a particle physicist and an economist.
- Trying to metric-ize real world impact leads to short term thinking rather than doing what's best for research and for society over the long term.

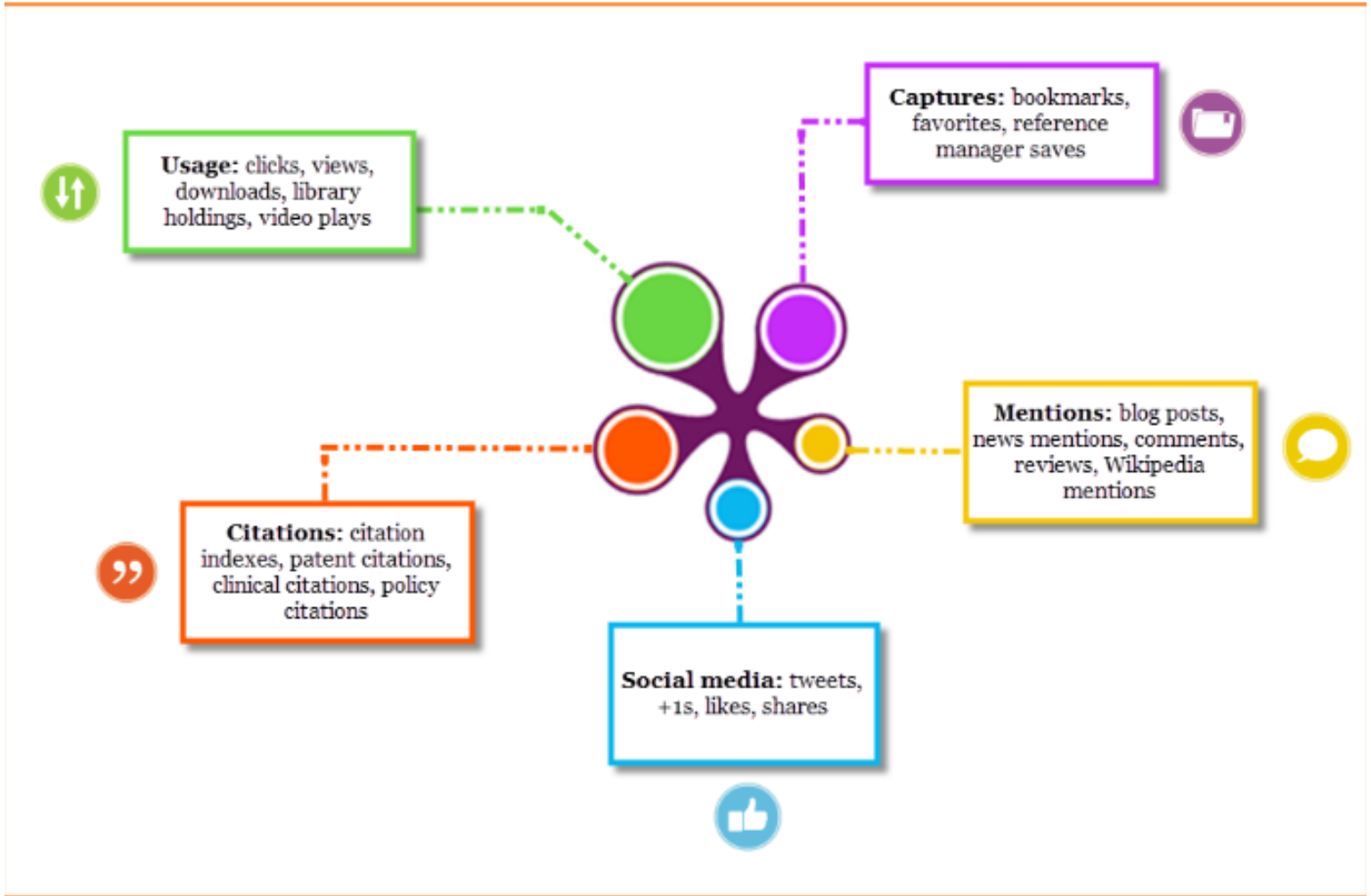
Altmetrics are often mentioned as a way to measure real world impact. The first thing we must absolutely be clear on though, is that attention is not the same thing as impact. Just because something is popular or eye-catching, doesn't mean it's important or of value.

David Crotty, The Scholarly Kitchen, Aug 2, 2018

Altmetrics

- Tools (examples):
  - PlumX metrics (2011-)

    Scopus
    Mendeley

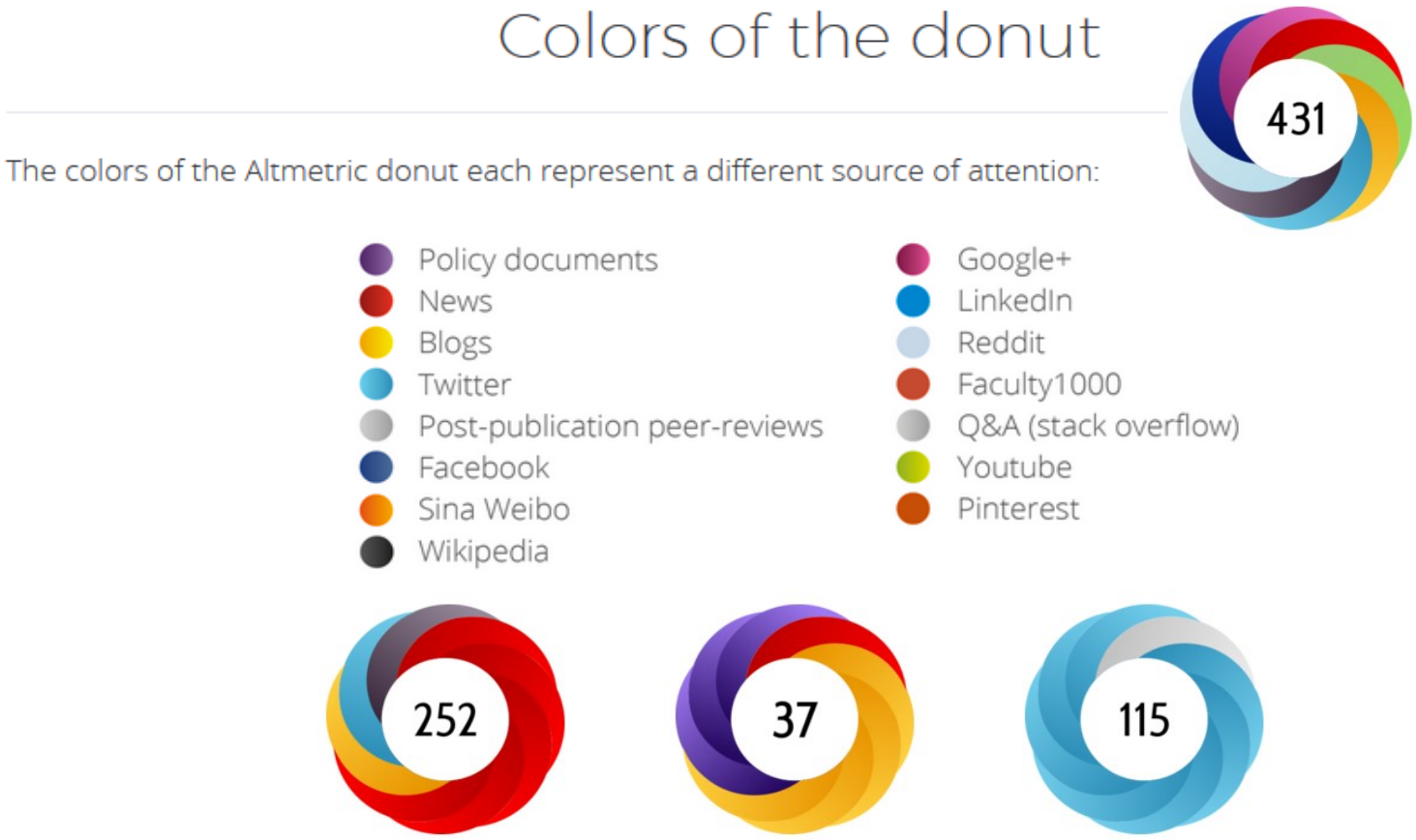


https://service.elsevier.com/app/answers/detail/a_id/12031/kw/PlumX/supporthub/scopus/
https://plumanalytics.com/learn/about-metrics/

Altmetrics

- Tools (examples):
  - Altmetric (2011-)

    Springer Nature
    Taylor and Francis
    JAMA Network



[Free Badges for Individual Reseacher (for websites)]

https://www.altmetric.com/about-our-data/the-donut-and-score/
https://www.altmetric.com/about-our-data/our-sources-2/

Altmetrics

- Tools (examples):
  - Altmetric (2011-)

    Springer Nature
    Taylor and Francis
    JAMA Network

[Free Badges for Individual Reseacher (for websites)]

Colors of the donut

The colors of the Altmetric donut each represent a different source of attention:

Blogs
Dimensions Citation Data
Facebook
Faculty Opinions (formerly F1000)
News and Mainstream Media
Mendeley
Patents
Policy Documents
Q&A Forums (Stack Exchange)
Reddit
Twitter/X
Web of Science Citation Data
Wikipedia
YouTube
Syllabi (Open Syllabus)

https://www.altmetric.com/about-our-data/the-donut-and-score/
https://www.altmetric.com/about-our-data/our-sources-2/

Altmetrics: Examples for different articles

a. https://doi.org/10.1371/journal.pmed.0020124

b. http://dx.doi.org/10.1038/ngeo2670

c. An article in Scopus

Future of bibliometric indicators and researcher evaluation

Future of bibliometric indicators

- Indicators are not everlasting! → Example: Oncotarget
  - loss of JIF 2017 – What does it mean for the authors?
  - Not indexed in MEDLINE since 2017

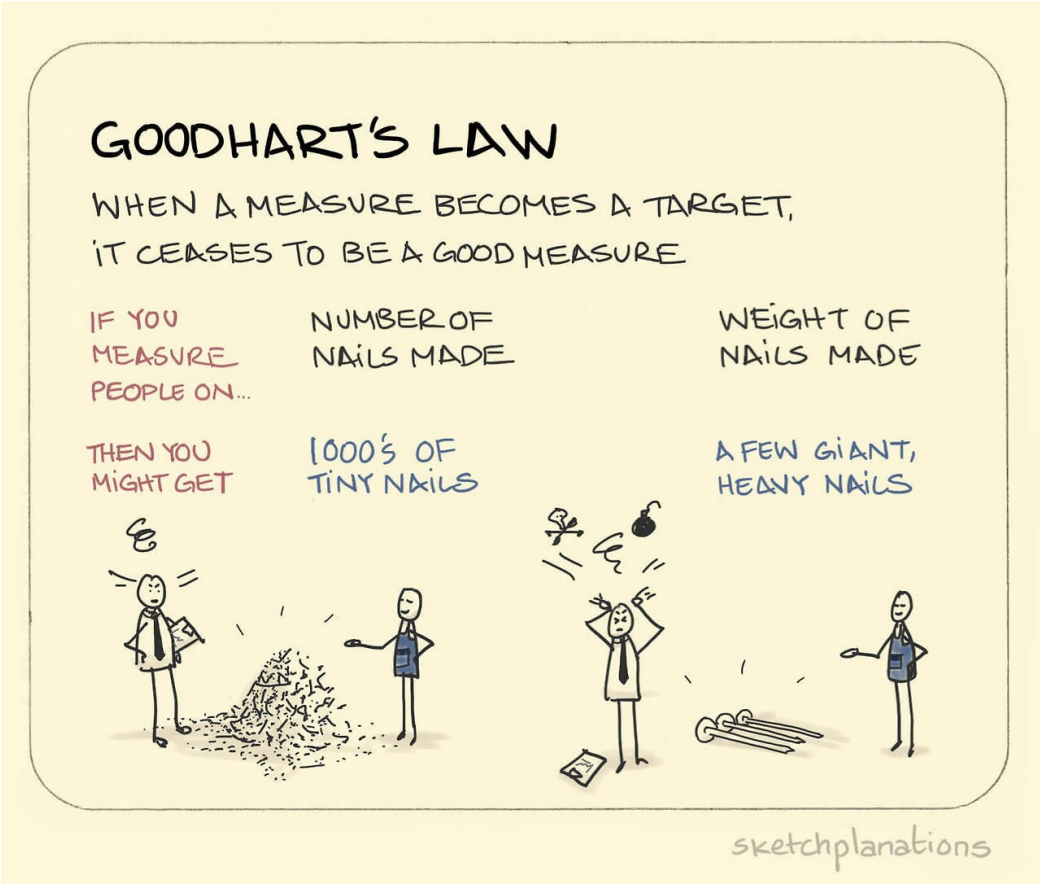
When a journal is delisted, authors pay a price

Shocked, confused, disappointed — these are the reactions of authors who recently published in a cancer journal that was delisted by a company that indexes journals.

https://retractionwatch.com/2018/03/06/when-a-journal-is-delisted-authors-pay-a-price/

Future of bibliometric indicators

- They are imperfect as a tool for researcher evaluation



Goodhart's Law:

In other words, if you pick a measure to assess people's performance, then they find a way to game it.

https://www.sketchplanations.com/post/167369765942/goodharts-law-when-a-measure-becomes-a-target/

Future of researcher evaluation

- New recommendations and tools are developed internationally:

- SF DORA = San Francisco Declaration on Research Assessment (2013): recommondations for research assessment at different levels

- TOP Factor = Transparency and Openness Promotion Factor (COS, 2015): an alternative way to assess journal qualities based on open science practices

- The Hong Kong Principles for assessing researchers (2019)

Future of researcher evaluation

Nationally: **NOR-CAM**: Norwegian Career Assessing Matrix

- The framework is aimed at academic institutions, funders, and national authorities
- It consist of six principles and four recommendations

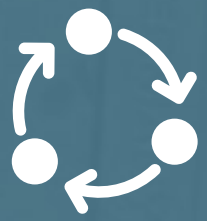
https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
A. Research output 	-Published works -Datasets -Software -Methodologies -Artistic results -Research reports	CRIS systems (e.g. Cristin) and other databases	Reflection on the relevance and quality of the results. Emphasis is placed on open access to publis-hed works and other re-sults, as well as whether the data adhere to the FAIR principles.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
B. Research process 	- Leadership and participation in research groups -Working across disciplines - Research integrity/RRI - Editorial activity - Peer reviews - Building consortia - External funding - Development of research infrastructure -Leadership and participation in clinical trials	CRIS systems and other databases. Narrative CV system with links to source data.	Reflection on roles and relevance. How and why various actors within and outside academia have been involved in the research process. Emphasis is placed on transparency in the research process.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
C. Pedagogical competence 	- Planning, execution, evaluation and development of lectures and supervision of students - Participation in the development of educational standards in academic communities - Mentoring - Devising and sharing learning materials	CV system with links to source data. Institutional registration of lecturing activity. Pedagogical portfolio.	Reflection on formal and informal competence and experience. Emphasis is placed on open education and the sharing of educational resources.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
D. Impact and innovation 	-Innovation -Entrepreneurship and commercialisation -Social innovation -Innovation in the public sector -Citizen science -Textbooks -Publishing activity -Research reports and studies -Application of research in public administration and industry	CRIS systems and other databases. Altmetrics. Narratives and impact stories. Patents and licences.	Reflection on the relevance and effects of activities for society, as well as external contributions to research. Sharing of research and educational results with the general public and others.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

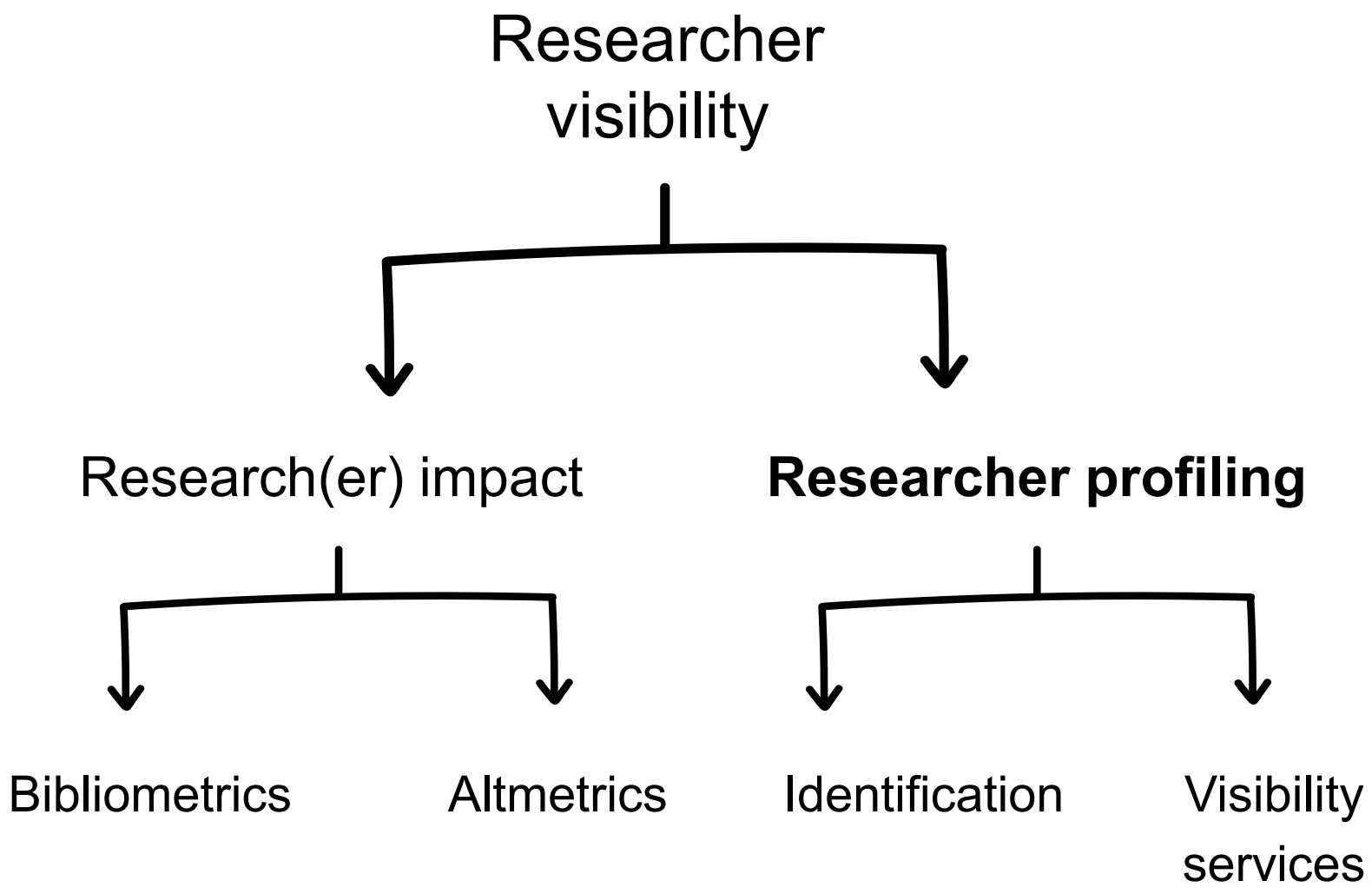
1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
E. Leadership 	-Institutional and de-partmental leadership -Leadership in academic networks and projects -Leadership outside academia -Leadership in panels and other committee work	CV system with links to source data, CRIS systems and other databases, narratives.	Formal and informal leadership, reflection on roles, processes and effects. Contribution to strategies and policy development in relation to open science.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx

NOR-CAM

1. Area of competence	2. Results and competencies (examples)	3. Documentation	4. Reflection
F. Other experience 	-Experience and competence from sectors outside academia. -Courses and discipline-related development work.	CV system with links to source data.	Reflection on how these experiences contribute to the competence in general.

https://www.uhr.no/en/front-page-carousel/nor-cam-a-toolbox-for-recognition-and-rewards-in-academic-careers.5780.aspx


Researcher visibility
Research(er) impact
Researcher profiling
Bibliometrics
Altmetrics
Identification
Visibility services

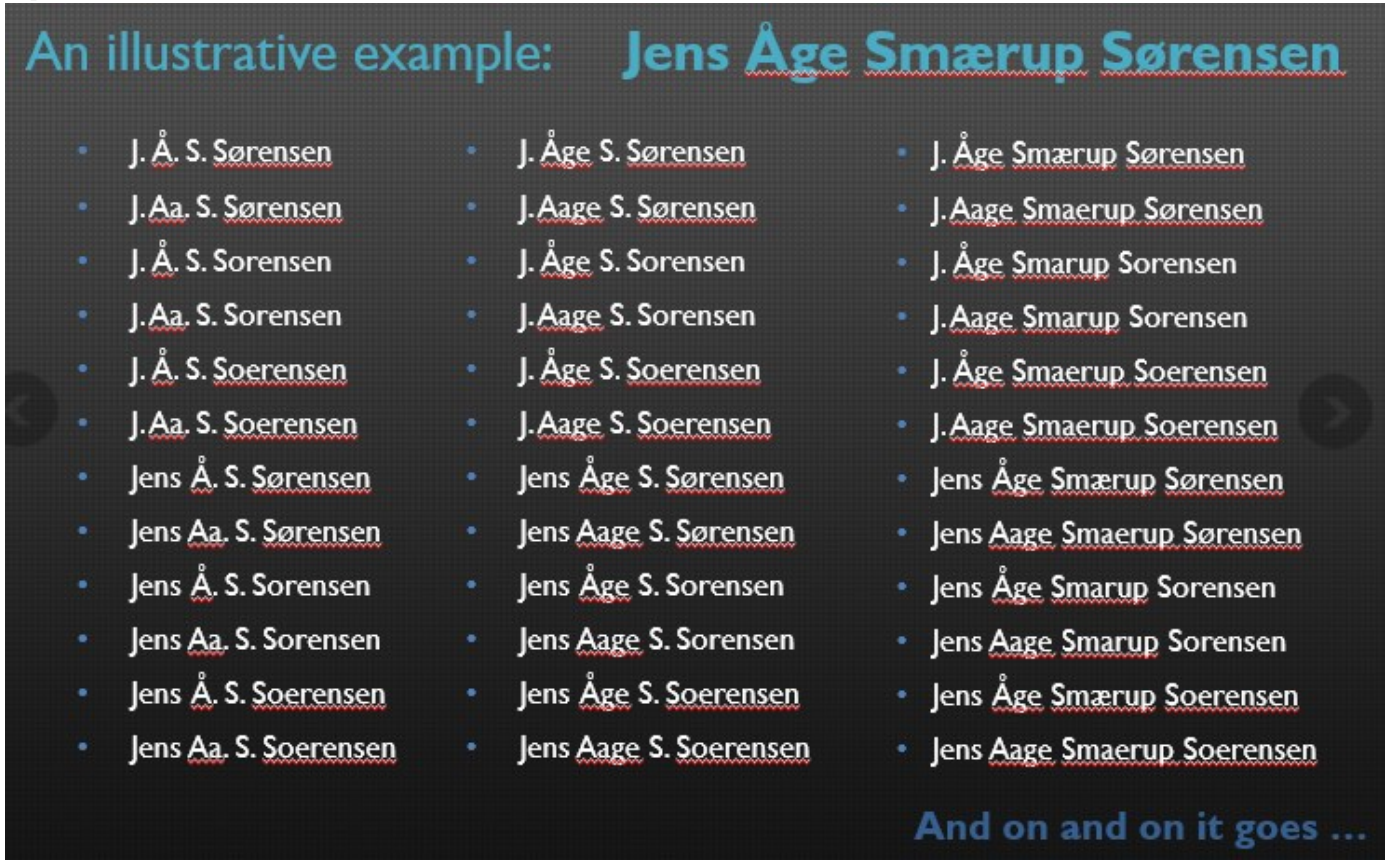
Unique identifiers

Unique researcher identifiers: What are they?

- Unique standardized names for each researcher

Unique researcher identifiers: Why do you need them?

- Distinguishing between similarity of personal names:
  - Name equivalence
  - Name changes
  - Different spelling and transliterations
  - Abbreviations
  - Multiple surnames
  - Switching surname and first name
  - …



https://www.nepjol.info/index.php/JPAHS/article/view/28840
https://academic.oup.com/asj/article/39/6/696/5320042
Ed Penz «Connecting research and researchers», 2013

Unique researcher identifiers: Why do you need them?

- Distinguishing between similarity of personal names
- Correct attribution of your research outputs and activities
- Reliable contributions and affiliations
- Improving discoverability and recognition

https://info.orcid.org/benefits-for-researchers/

Unique researcher identifiers: How do you get them?

- Publisher based:
  - Scopus Author ID (Elsevier) → automatically assigned during indexing of your first paper

  - ResearcherID (Clarivate Analytics) → integrated with Publons profile

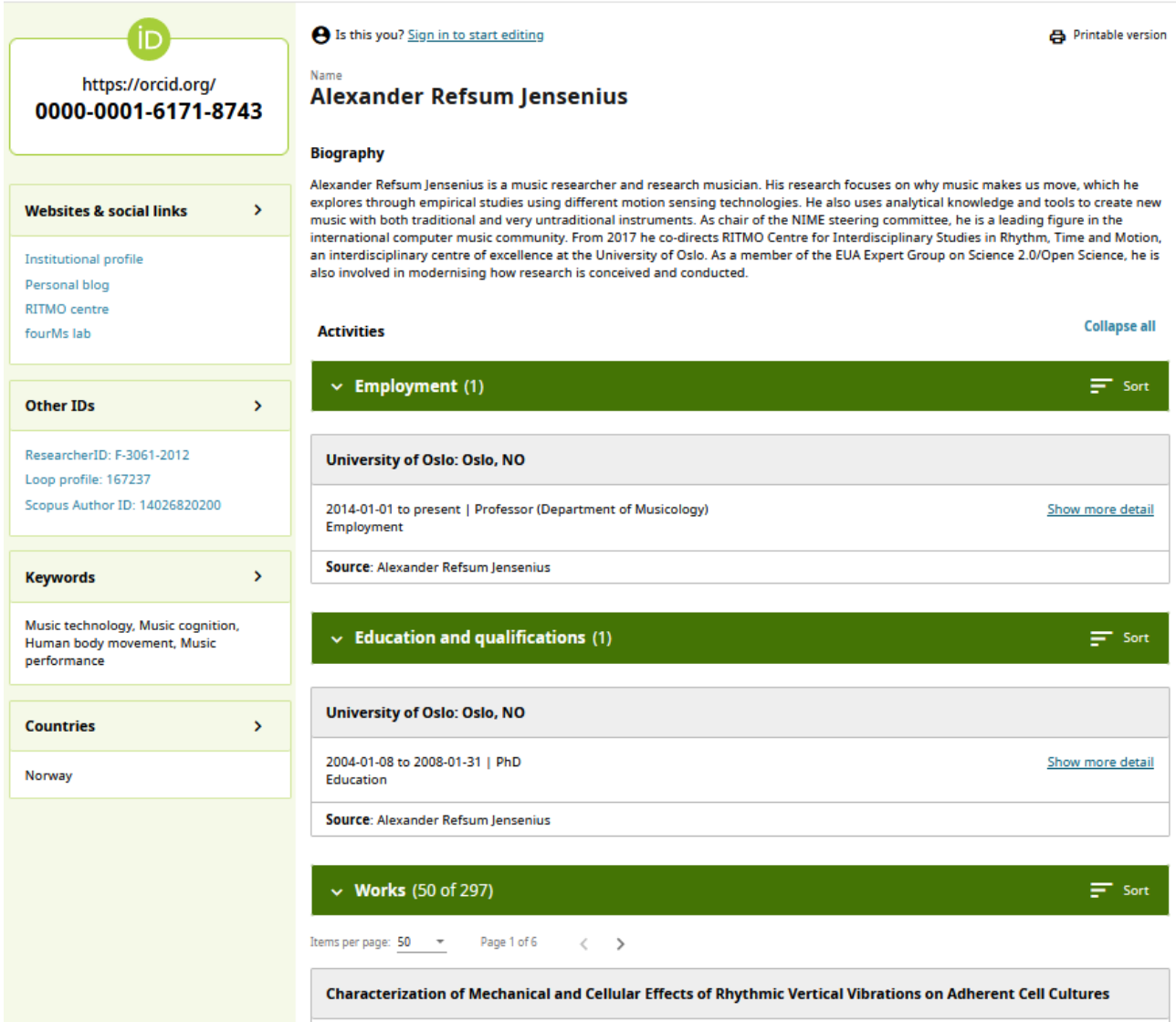
Unique researcher identifiers: How do you get them?

- Free:
  - ORCID (Open Researcher and Contributor ID)
    - Must be created
    - Already incorporated in National Research Archive
    - Overview of publisher that require ORCID
    - Direct import
    - You own your own record

  - Google Scholar Author Profile
    - Must be created

Unique researcher identifiers: Example

ORCID record of [Aleksander Refsum Jensenius]



https://orcid.org/
0000-0001-6171-8743

Is this you? Sign in to start editing

Printable version

Name
Alexander Refsum Jensenius

Websites & social links

Institutional profile
Personal blog
RITMO centre
fourMs lab

Other IDs

ResearcherID: F-3061-2012
Loop profile: 167237
Scopus Author ID: 14026820200

Keywords

Music technology, Music cognition, Human body movement, Music performance

Countries

Norway

Biography

Alexander Refsum Jensenius is a music researcher and research musician. His research focuses on why music makes us move, which he explores through empirical studies using different motion sensing technologies. He also uses analytical knowledge and tools to create new music with both traditional and very untraditional instruments. As chair of the NIME steering committee, he is a leading figure in the international computer music community. From 2017 he co-directs RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, an interdisciplinary centre of excellence at the University of Oslo. As a member of the EUA Expert Group on Science 2.0/Open Science, he is also involved in modernising how research is conceived and conducted.

Activities Collapse all

Employment (1) Sort

University of Oslo: Oslo, NO

2014-01-01 to present | Professor (Department of Musicology)
Employment
Show more detail

Source: Alexander Refsum Jensenius

Education and qualifications (1) Sort

University of Oslo: Oslo, NO

2004-01-08 to 2008-01-31 | PhD
Education
Show more detail

Source: Alexander Refsum Jensenius

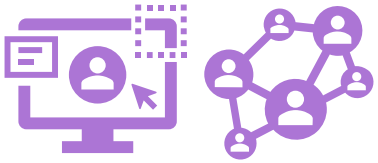
Works (50 of 297) Sort

Items per page: 50 Page 1 of 6

Characterization of Mechanical and Cellular Effects of Rhythmic Vertical Vibrations on Adherent Cell Cultures

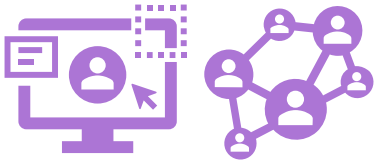
Visibility services

Visibility services: What are they?



- Online services helping you to:
  - Connect to each other easier
  - Promote yourselves and all your scholarly activities to a wider audience

Visibility services: Why do you need them?



WHY SHOULD I CARE ABOUT MY ONLINE PRESENCE?

- To make your research and teaching activities known
- To increase the chance of publications getting cited
- To correct attribution, names and affiliations
- To make sure that a much as possible is counted in research assessments
- To increase the chance of new contacts for research cooperation
- To increase the chance of funding
- To serve society better

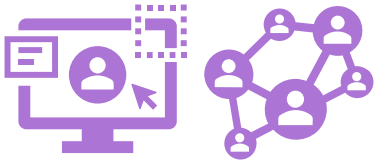
Universiteitsbibliotheek Universiteit Utrecht

http://libguides.library.uu.nl/researchimpact/profiles

Visibility services: How do you get them?

- Majority you have to **create yourself** (often proprietary):
  - Profiles on different professional and scholarly communities and networks
    - ResearchGate, Academia.edu, LinkedIn,…
  - Websites
    - Personal blogs and personal websites
    - Wikis
  - Social media
    - Twitter/X, Mastodon, Facebook, Instagram, …
    - YouTube, TikTok,….

Visibility services: SoMe pros and cons

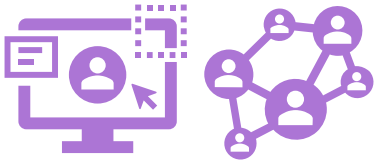


Benefits:

- Gives **instant up-to-date** with current research
- **Rapid and meaningful communication** with peers
- Creates **platforms for career development** and interdisciplinary **collaboration**
- Provides **new ways of communicating** with your students
- **Easier recruitment** of staff, students, and study participants
- **Increases citation** of work shared
- **Allows** tracking of research impact via **altmetrics**

Based on Allen et al (2023) *An academic's guide to social media: learn, engage, and belong*

Visibility services: SoMe pros and cons

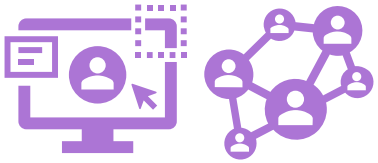


Challenges:

- Additional **time burden** to keep up-to-date and create content
- **Reputational risks** in case of posting poorly written statements, sharing or commenting certain content or topics
- Raised **privacy concerns** such as account hacking, personal information leakage, deep fakes
- Easy **dissemination of misinformation** and poor quality information
- **Pressure by the research institutions** to be engaged in self-promotion
- **Trolling**

Based on Allen et al (2023) *An academic's guide to social media: learn, engage, and belong*

Visibility services: How do you get them?



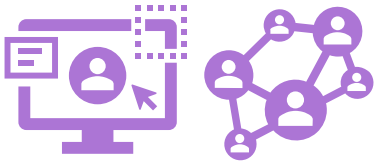
- Some are given to you **automatically**:
  - Personal profile pages at UiO
    - How to edit your UiO profile page

Visibility services: Examples – personal profiles at UiO

Torbjørn Rognes,
Research Group for Biomedical Informatics

Bruno Laeng,
Research Group Literature, Cognition and Emotions (LCE)

Eirinn Larsen,
Research Group for Democracy, Freedom and Boundaries



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How to edit your UiO profile page

How to improve your visibility?

(adapted from Tampere University Library, University Library of South Australia and book by Allen et al 2023)

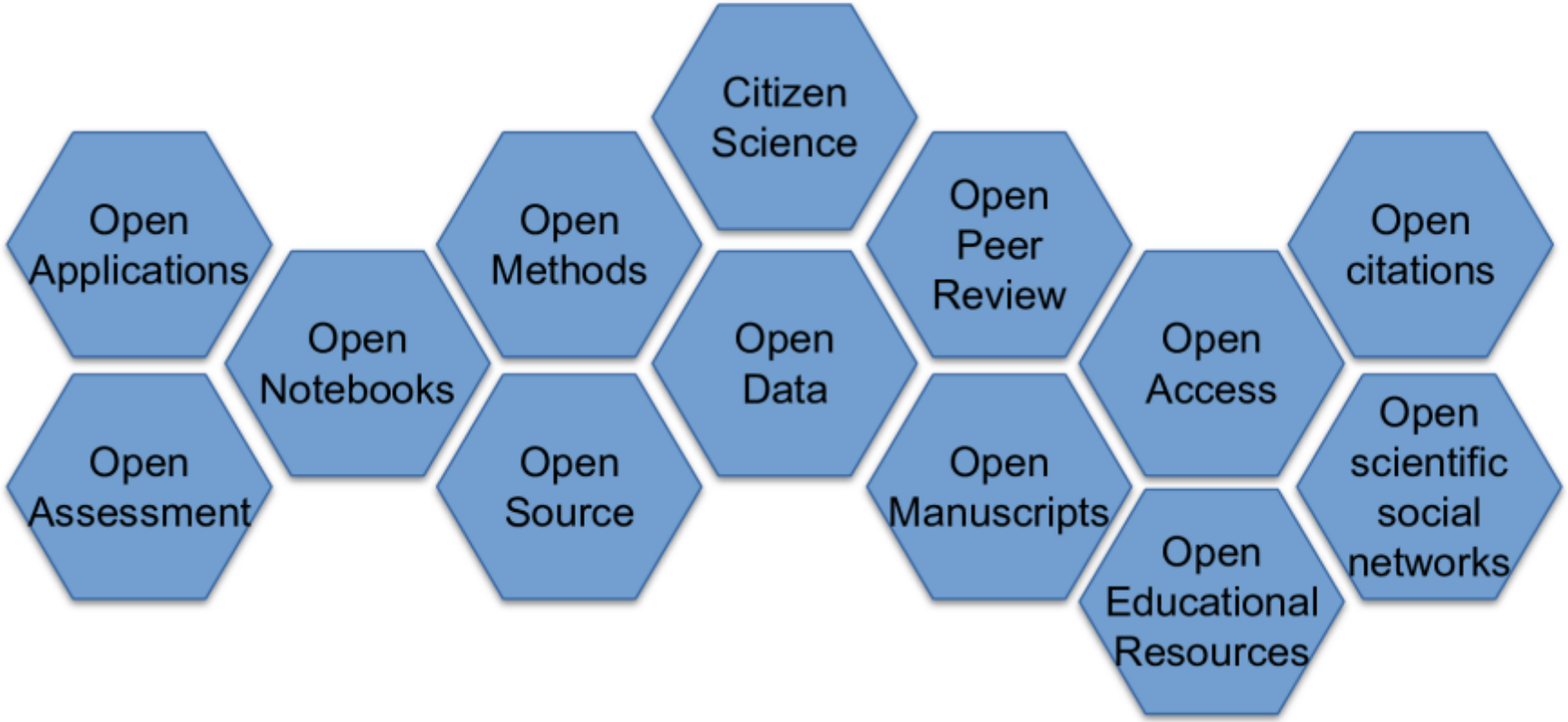
- Create an **ORCID** iD.
- Use a **consistent spelling of your author-name** in all publications.
- Use the **standardized institutional affiliation** in your publications.
- Choose your publication channels carefully; use **Open Access** channels (including self-archiving), as well as **preprint publishing** (when possible).
- Add a **persistant identifier to your research output** (DOI: article, preprint or dataset; ISBN: book).
- Add a **CreativeCommons lisences** to all your research output: preprints, datasets, OER,…
- Choose **title of your paper** carefully (tips by Anna Clemens, a Scientific Editor)
- Check **your own publication information** at international databases and contact the service provider if you notice errors in your name or contact information.
- Join **professional and scholarly communities and networks** for researchers to follow news in your field, and to discuss and share your research.
- Consider communicating information about your research through **social media**.

https://libguides.uta.fi/researchimpactandvisibility/visibility

https://guides.library.unisa.edu.au/Networking/Visible

How to improve your visibility?

Open Research = **Share!**



Adapted from https://www.arj.no/2021/06/01/nor-cam/

You need help?

- Talk to your research administration
- Get inspired by others
- Read!
  - Allen K-A, Jimerson SR, Quintana DS & McKinley L (2023) *An academic's guide to social media: learn, engage, and belong*. Routledge; Abington, Oxon, UK; New York, NY.

Open Science Lunch

Each last Thursday of the month at 12:00 we invite you to join us for a lunch seminar to hear about how to make your research more open. We will discuss research transparency and visibility, open publishing, data sharing, and more!

Upcoming

Time and place: Sep. 28, 2023 12:00 PM – 1:00 PM, Zoom

Citizen science: science for everyone?

Join us for the Open Science Lunch to hear about the challenges and opportunities of data provided by the public in research.

https://www.ub.uio.no/english/courses-events/events/open-science-lunch/

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ReproducibiliTea

Journal Club

JOIN IN AND DISCUSS WITH FELLOW STUDENTS AND RESEARCHERS

OPEN RESEARCH, REPRODUCIBILITY and RESEARCH IMPROVEMENT

Join us

Everyone is welcome to join us - whether you are an enthusiast of open and reproducible research, a skeptic, or a cautious explorer. Currently, all meetings are hybrid with the possibility of joining on-site at Blindern or via Zoom. Grab a cup of tea (coffee?) and join us!

Subscribe to our mailing list →

https://www.ub.uio.no/english/libraries/dsc/open-repro-research/reproducibilitea/

Courses in research data management and sharing

November 6th – 27th

Upcoming Courses

Data management planning

Nov. 6, 9:00 AM, Zoom

Data organization, metadata, and documentation

Nov. 8, 9:00 AM, Zoom

Data classification and storage selection

Nov. 10, 9:00 AM, Zoom

Copyright and licensing

Nov. 13, 9:00 AM, Zoom

Sharing and archiving research data

Nov. 16, 9:00 AM, Zoom

Finding and reusing research data

Nov. 17, 9:00 AM, Zoom

Upcoming Workshops

Workshop on Data Management Plans

Nov. 20, 12:00 PM, Georg Sverdrups hus: DSC-Oasen

Workshop on Data Documentation

Nov. 23, 9:00 AM, Georg Sverdrups hus: DSC-Oasen

Workshop on Archiving in DataverseNO

Nov. 27, 12:00 PM, Georg Sverdrups hus: DSC-Oasen

https://www.ub.uio.no/english/courses-events/courses/other/research-data/

Carpentry@UiO

Carpentry@UiO is a community of people who are passionate about learning, teaching, and sharing best practices and digital skills for making the research process more reproducible and effective. If you want to get involved, or join one of our workshops, check us out!

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The Unix Shell

Shell speeds up repetitive and tedious processes. It is also essential skills needed to use high-performance computing (HPC) resources.

Version Control with Git

Git helps you to keep track of what you've done, for a better collaboration and for yourself in future. In the workshop we use GitHub as well.

Programming in Python

Python is now widely used in scientific computing with various powerful packages. Carpentry@UiO runs workshops for participants with no programming experience ("Plotting and Programming in Python" lesson) and for participants at intermediate level ("Programming with Python" lesson, episodes 10-12).

R for Reproducible Scientific Analysis

R is commonly used for statistical analysis, but it is also a powerful programming language. Workshops on R focuses on teaching best practices for scientific computing: breaking down analyses into modular units, task automation, and encapsulation. Workshops on R may use lessons from Data Carpentry instead.

Using Databases and SQL

Databases include powerful tools for search and analysis, and can handle large, complex data sets. The lesson will show how to use a database to explore research data by using SQL.

https://www.ub.uio.no/english/libraries/dsc/carpentry-uio/index.html

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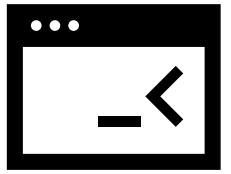
Learn, teach, and share digital skills and best practices

Be a part of an interdisciplinary community

Make use of and contribute to community-built teaching materials

https://www.ub.uio.no/english/libraries/dsc/carpentry-uio/index.html

Courses from the IT-department



Events and Courses

Introduction to R and RStudio
Sep. 19, Ole-Johan Dahls hus

Introduction to R and RStudio
Sep. 20, Ole-Johan Dahls hus

Introduction to R and RStudio
Sep. 21, Ole-Johan Dahls hus

Begynnerkurs i Stata
Oct. 10, Seminarrom Pascal i Ole-Johan Dahls hus

Begynnerkurs i Stata
Oct. 11, Seminarrom Pascal i Ole-Johan Dahls hus

Begynnerkurs i Stata
Oct. 12, Seminarrom Pascal i Ole-Johan Dahls hus

https://www.uio.no/english/services/it/research/

Thank you!