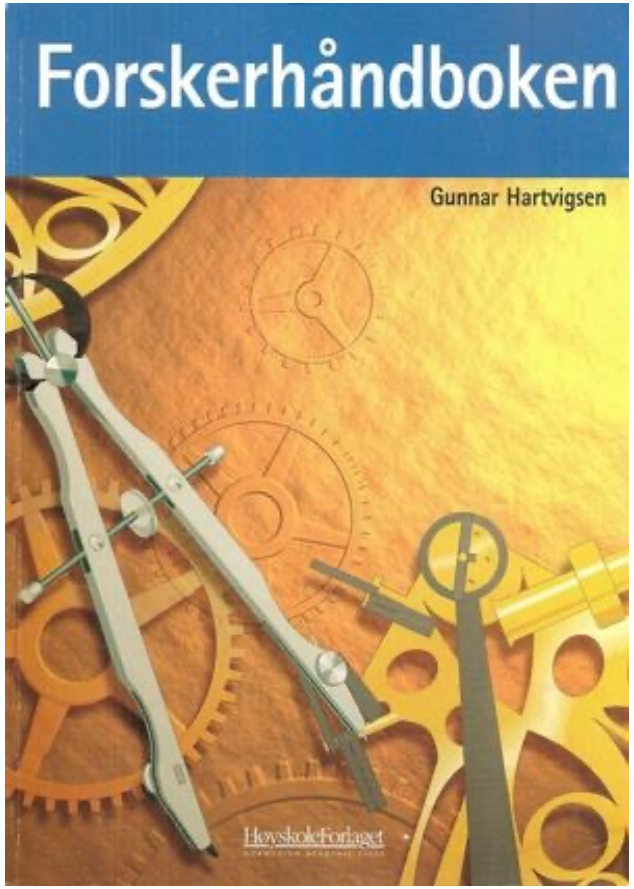
Hva enhver (forsker) bør vite om forskning

Gunnar Hartvigsen, professor

HELGELANDSSYKEHUSET
HELGELAANTEN SKÏEMTJEGÅETIE

12.3.2024

Hva er forskning?



Hartvigsen, G. Forskerhåndboken. Kristiansand: HøyskoleForlaget, 1998. (ISBN: 82-7634-122-5)

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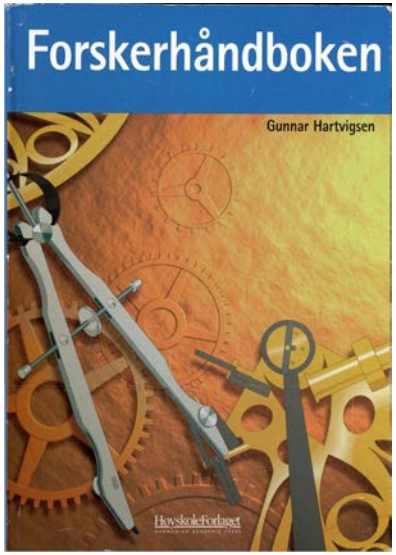
Målet med forskning

Målet med forskning er ganske enkelt å avdekke hittil ukjent kunnskap. Det ukjente kan også komme i form av uventede sammenstillinger av etablert kunnskap. Problemet er å finne ut hvordan man kan avdekke ny kunnskap og samtidig være sikker på at det som skal være nytt, virkelig er det.



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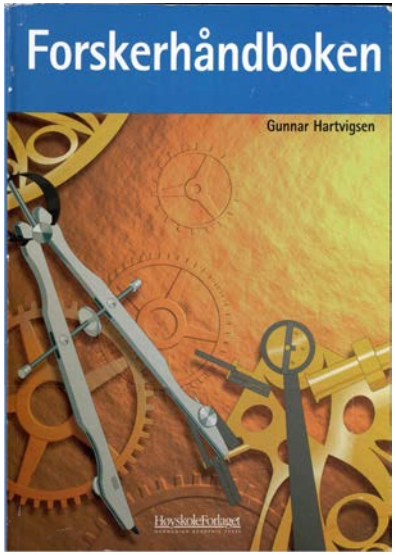
Hva kan utforskes?

Svaret på hva som kan utforskes, er ganske enkelt "alt". Det eksisterer *ingen begrensninger* med hensyn til potensielle problemstillinger. Forskning er egentlig bare en systematisk undersøkelse av en problemstilling, med påfølgende analyse av resultatene. Vi prøver å etablere ny kunnskap, og her er selv den minste sten et bidrag når den legges på kunnskapens mur. I realiteten kan alt som opptar oss – som stimulerer vår nysgjerrighet – utforskes eller forskes på.



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Hva er forskning?

Akademiet for yngre forskere forklarer

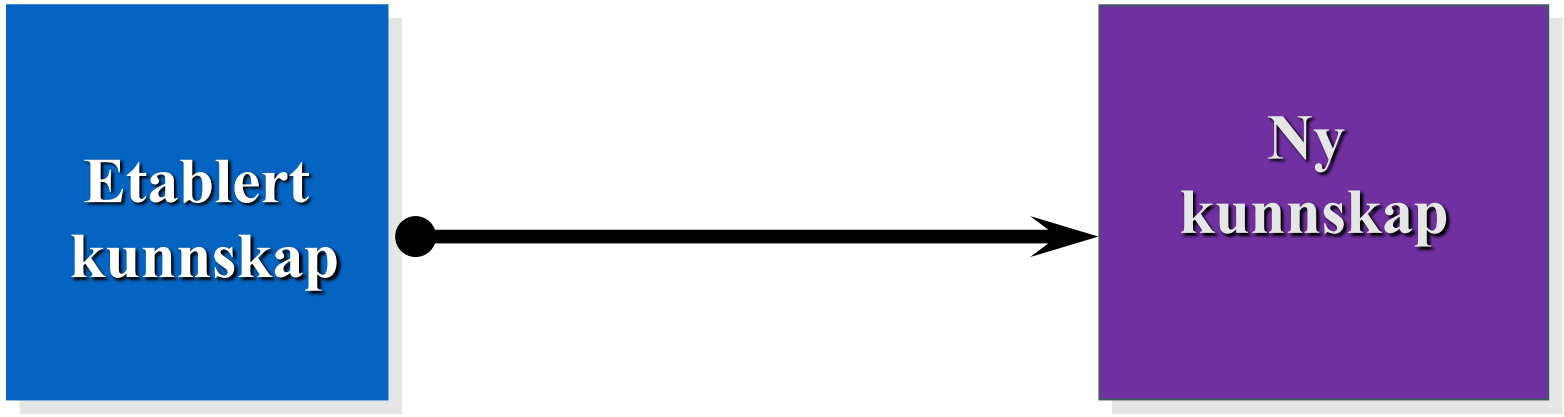
Video

https://www.youtube.com/watch?v=sBgi9tJPY-o

Grunnforskning?
Anvendt forskning?
Utviklingsarbeid?

Forskning inndeles i grunnforskning, anvendt forskning og utvikling

National Science Foundation i USA definerer **forskning** som et **systematisk studie** rettet mot å **komplettere vitenskapelig kunnskap eller forståelse** av det emnet som studeres.

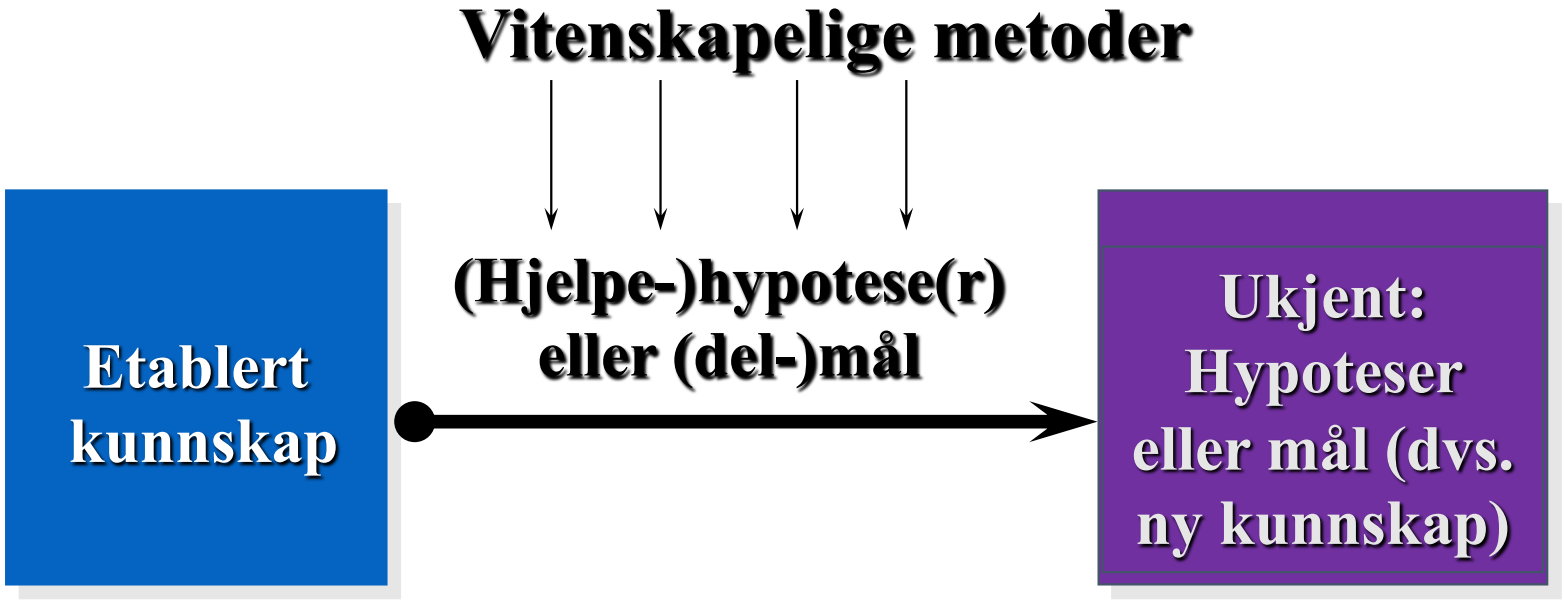


Forskning inndeles i grunnforskning, anvendt forskning og utvikling

Forskning klassifiseres enten som **grunnforskning** (Basic research) eller **anvendt forskning** (Applied research) avhengig av målsettingen med prosjektet.

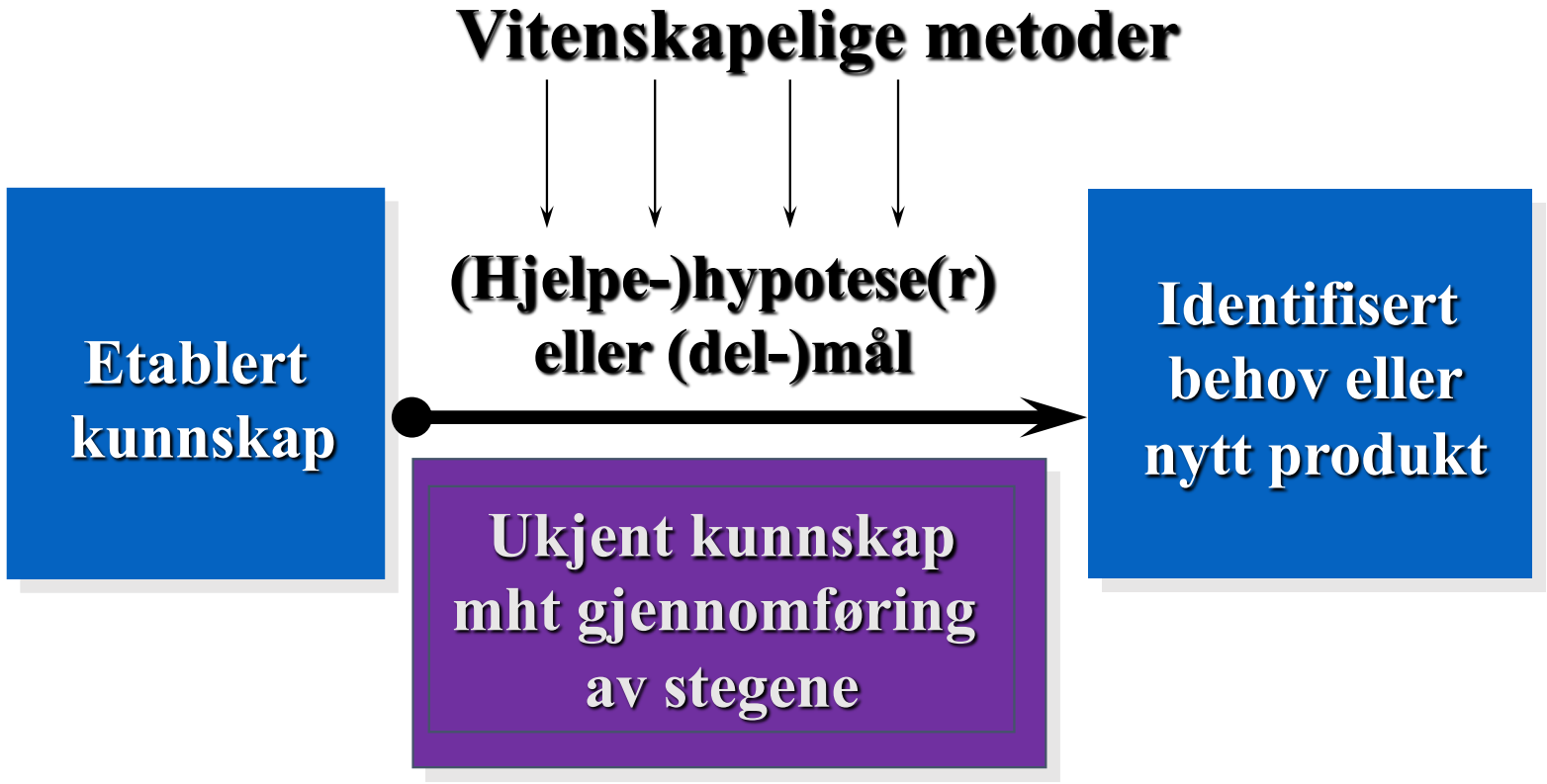
Grunnforskning, anvendt forskning og utvikling

For ***grunnforskning*** er målet å skaffe mer komplett kunnskap eller en bedre forståelse for fundamentale aspekter ved fenomener og til observerbare fakta uten at man har spesifikke anvendelser med hensyn på foredling eller produksjon i tankene.



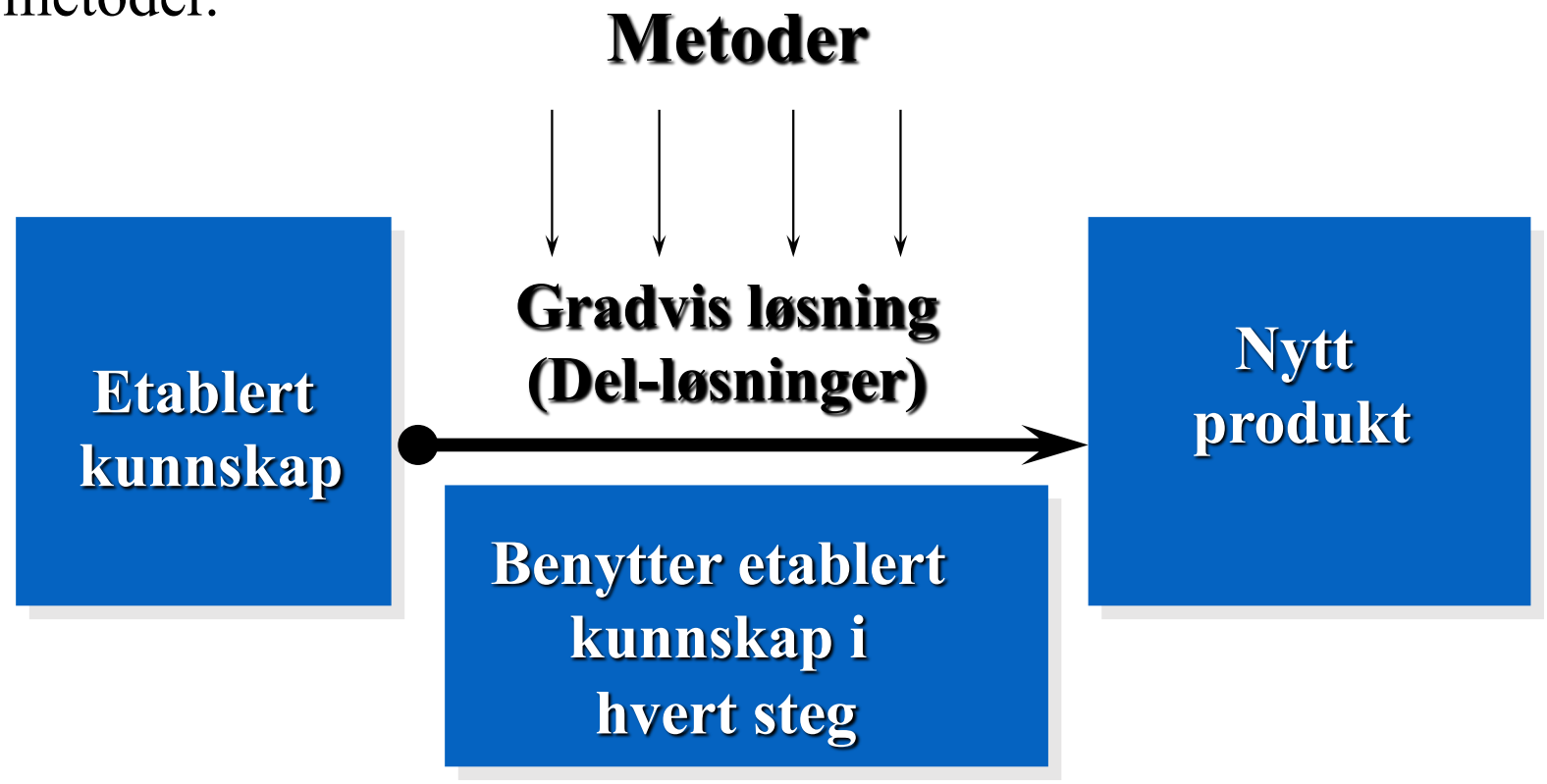
Grunnforskning, anvendt forskning og utvikling

For ***anvendt forskning*** er målet å fremskaffe kunnskap eller forståelse nødvendig for å bestemme mellomleddene som behøves for å kunne møte gjenkjente og spesifikke behov.



Grunnforskning, anvendt forskning og utvikling

Utvikling er systematisk bruk av kunnskap eller forståelse utvunnet fra forskning, rettet mot produksjon av nyttig materiale, utstyr, systemer eller metoder.



A mysterious thing ...

"Dannelsen av **hypoteser** er den mest mystiske av alle kategorier av vitenskapelig metode. Hvor de kommer fra, vet ingen. En person som sitter et sted, passer sin egen virksomhet, og plutselig - flash! – så forstår han noe han ikke forsto fra før. Inntil hypotesem er testet, er den ikke sann. For testene er ikke opphavet til hypotesen. Opphavet er et annet sted."

[Pirsig, 1974, s. 116]

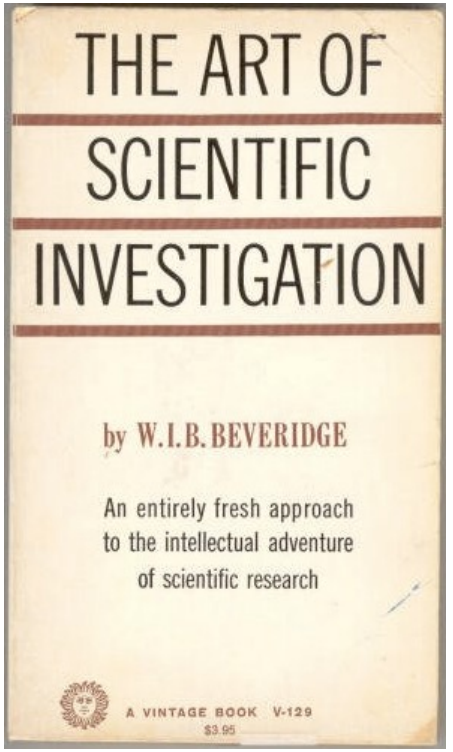
Intellektuelt snobberi?

Anvendt forskning utsatt for uberettiget kritikk

Beveridge (1950): innen visse kretser eksisterer det en viss grad av intellektuelt snobberi og en tendens til å se med forakt på anvendt forskning.

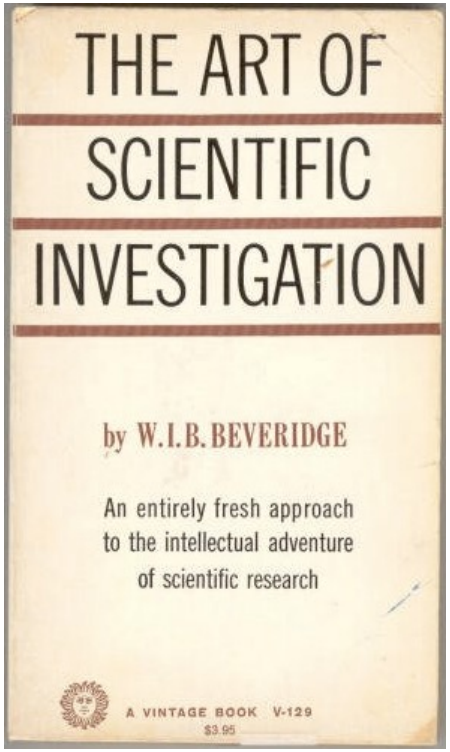
Denne holdningen er basert på to falske forestillinger:

1. at ny kunnskap kun oppdages gjennom grunnforskning mens anvendt forskning forsøker å anvende allerede eksisterende kunnskap, og
2. at grunnforskning er en intellektuelt sett mer avansert aktivitet siden den krever større vitenskapelig skikkethet og er derfor regnet for å være vanskeligere.



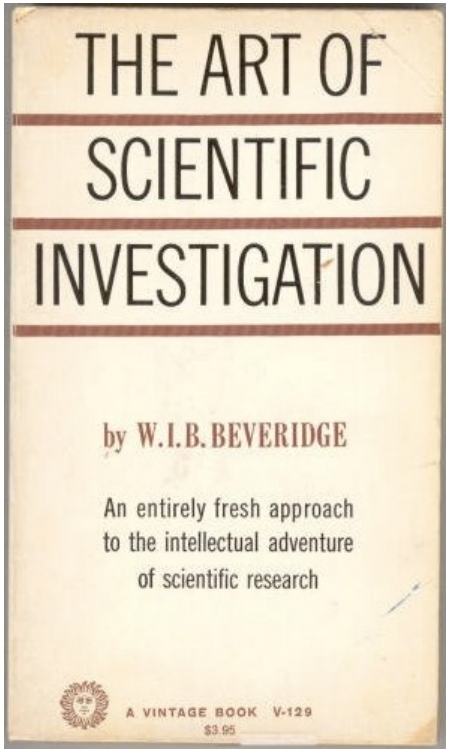
Anvendt forskning utsatt for uberettiget kritikk

- Beveridge sier at begge disse forestillingene er feil. Viktig kunnskap har ofte vært et resultat fra anvendt forskning.
- For eksempel ble bakterier i stor grad oppdaget gjennom Pasteurs undersøkelser av praktiske problemer i tilknytning til øl-, vin- og silkeindustrien.



Anvendt forskning utsatt for uberettiget kritikk

- Beveridge sier videre at det ofte er slik at det er vanskeligere å oppnå resultater innen anvendt forskning enn innen grunnforskning fordi forskeren er tvunget til å løse et gitt problem i stedet for å forfølge ethvert lovende spor som dukker opp.
- Det er også mange ganger slik at de enkleste og mest opplagte oppdagelser allerede er gjort innen anvendt forskning.



Valg av tema/område for forskning

Hvordan velger vi et område å forske på?

- Problemvalg: Vurder den marginale nytten av forskningen. Man må søke etter et område der grensenytten fra vår innsats er størst.
- Bra: Et problem som krever begrenset innsats for å få ny kunnskap.
- Dårlig: Velkjent problem. Innsatsen som kreves for å få ny kunnskap vil kunne være enorm.

Forskningen er under «angrep»

EDITORIALS

Check for updates

The BMJ, London, UK
Cite this as: *BMJ* 2020;371:m4425
http://dx.doi.org/10.1136/bmj.m4425
Published: 13 November 2020

Covid-19: politicisation, "corruption," and suppression of science

When good science is suppressed by the medical-political complex, people die

Kamran Abbasi *executive editor*

Politicians and governments are suppressing science. They do so in the public interest, they say, to accelerate availability of diagnostics and treatments. They do so to support innovation, to bring products to market at unprecedented speed. Both of these reasons are partly plausible; the greatest deceptions are founded in a grain of truth. But the underlying behaviour is troubling.

Science is being suppressed for political and financial gain. Covid-19 has unleashed state corruption on a grand scale, and it is harmful to public health.[1] Politicians and industry are responsible for this opportunistic embezzlement. So too are scientists and health experts. The pandemic has revealed how the medical-political complex can be manipulated in an emergency—a time when it is even more important to safeguard science.

The UK's pandemic response provides at least four examples of suppression of science or scientists. First, the membership, research, and deliberations of the Scientific Advisory Group for Emergencies (SAGE) were initially secret until a press leak forced transparency.[2] The leak revealed inappropriate involvement of government advisers in SAGE, while exposing under-representation from public health, clinical care, women, and ethnic minorities. Indeed, the government was also recently ordered to release a 2016 report on deficiencies in pandemic preparedness, Operation Cygnus, following a verdict from the Information Commissioner's Office.[3 4]

Next, a Public Health England report on covid-19 and inequalities. The report's publication was delayed by England's Department of Health; a section on ethnic minorities was initially withheld and then, following a public outcry, was published as part of a follow-up report.[5 6] Authors from Public Health England were instructed not to talk to the media. Third, on 15 October, the editor of the *Lancet* complained that an author of a research paper, a UK government scientist, was blocked by the government from speaking to media because of a "difficult political landscape."[7]

Now, a new example concerns the controversy over point-of-care antibody testing for covid-19.[8] The prime minister's Operation Moonshot depends on immediate and wide availability of accurate rapid diagnostic tests.[9] It also depends on the questionable logic of mass screening—currently being trialled in Liverpool with a suboptimal PCR test.[10 11]

The incident relates to research published this week by *The BMJ*, which finds that the government procured an antibody test that in real world tests falls well short of performance claims made by its manufacturers.[12 13] Researchers from Public Health England and collaborating institutions sensibly pushed to publish their study findings before the government committed to buying a million of these tests but were blocked by the health department and the prime minister's office.[14] Why was it important to procure this product without due scrutiny? Prior publication of research on a preprint server or a government website is compatible with *The BMJ*'s publication policy. As if to prove a point, Public Health England then unsuccessfully attempted to block *The BMJ*'s press release about the research paper.

Politicians often claim to follow the science, but that is a misleading oversimplification. Science is rarely absolute. It rarely applies to every setting or every population. It doesn't make sense to slavishly follow science or evidence. A better approach is for politicians, the publicly appointed decision makers, to be informed and guided by science when they decide policy for their public. But even that approach retains public and professional trust only if science is available for scrutiny and free of political interference, and if the system is transparent and not compromised by conflicts of interest.

Suppression of science and scientists is not new or a peculiarly British phenomenon. In the US, President Trump's government manipulated the Food and Drug Administration to hastily approve unproved drugs such as hydroxychloroquine and remdesivir.[15] Globally, people, policies, and procurement are being corrupted by political and commercial agendas.[16]

The UK's pandemic response relies too heavily on scientists and other government appointees with worrying competing interests, including shareholdings in companies that manufacture covid-19 diagnostic tests, treatments, and vaccines.[17] Government appointees are able to ignore or cherry pick science—another form of misuse—and indulge in anti-competitive practices that favour their own products and those of friends and associates.[18]

How might science be safeguarded in these exceptional times? The first step is full disclosure of competing interests from government, politicians, scientific advisers, and appointees, such as the heads of test and trace, diagnostic test procurement, and vaccine delivery. The next step is full transparency about decision making systems, processes, and knowing who is accountable for what.

Once transparency and accountability are established as norms, individuals employed by government should ideally only work in areas unrelated to their competing interests. Expertise is possible without competing interests. If such a strict rule becomes impractical, minimum good practice is that people

Tekst fra en leder i BMJ:

- Politikere og regjeringer undertrykker vitenskap.
- De gjør det i allmennhetens interesse, sier de, for å akselerere tilgjengeligheten av diagnostikk og behandlinger.
- De gjør det for å støtte innovasjon, for å bringe produkter til markedet i enestående hastighet.
- Begge disse grunnene er delvis plausible; De største bedrag er bygge på et snev av sannhet. Men den underliggende atferden er urovekkende.

The world this week

News in focus

KLAUS OHLENSCHLÄGER/GETTY

Retractions are skyrocketing as publishers work to remove sham articles from the literature.

MORE THAN 10,000 RESEARCH PAPERS WERE RETRACTED IN 2023 — A NEW RECORD

The number of articles being retracted rose sharply this year. Integrity experts say that this is only the tip of the iceberg.

By Richard Van Noorden

The number of retractions issued for research articles in 2023 has passed 10,000 — smashing annual records — as publishers struggle to clean up a slew of sham papers and peer-review fraud. Among large research-producing nations, Saudi Arabia, Pakistan, Russia and China have the highest retraction rates over the past two decades, a *Nature* analysis has found.

The bulk of 2023's retractions were from journals owned by Hindawi, a London-based subsidiary of the publisher Wiley (see 'A bumper year for retractions'). So far this year, Hindawi journals have pulled more than 8,000 articles, citing factors such as "concerns that the peer review process has been compromised" and "systematic manipulation of the publication and peer-review process", after investigations prompted by internal editors and research-integrity sleuths who raised questions about incoherent text and irrelevant references in thousands of papers.

Most of the Hindawi retractions are from special issues: collections of articles that are often overseen by guest editors and that have become notorious for being exploited by scammers to rapidly publish low-quality or sham papers.

Counting the costs

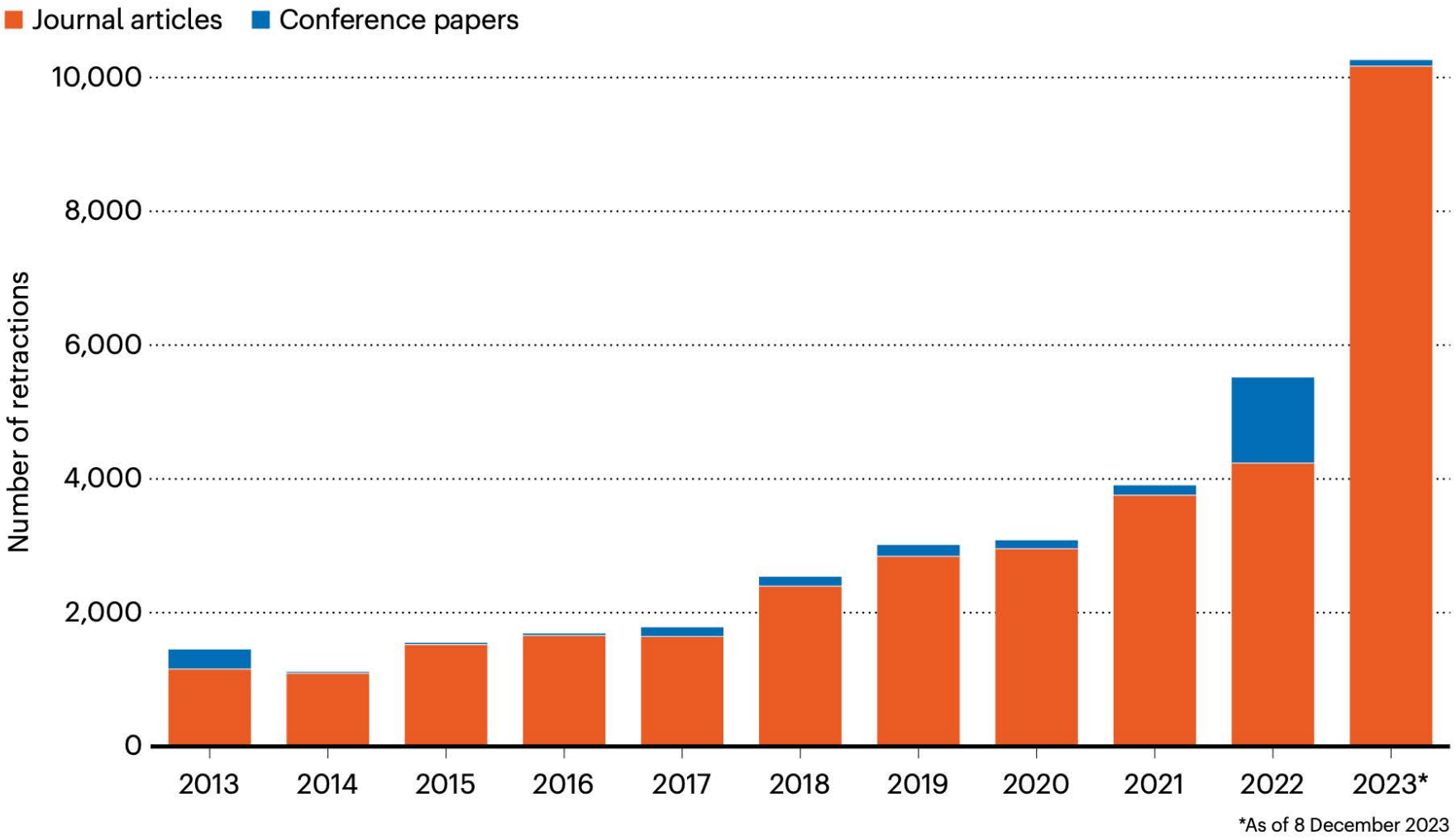
On 6 December, Wiley announced on an earnings call that it would stop using the Hindawi brand name altogether, having previously shuttered four Hindawi titles and, towards the end of 2022, temporarily paused the publication of special issues. Wiley will fold existing titles back into its own brand. As a result of the problems, said Matthew Kissner, Wiley's interim chief executive, the publisher

Angrepene kommer også fra «innsiden»:

Antall artikler som trekkes tilbake, har økt kraftig i år. Integritetseksperter sier at dette bare er toppen av isfjellet.

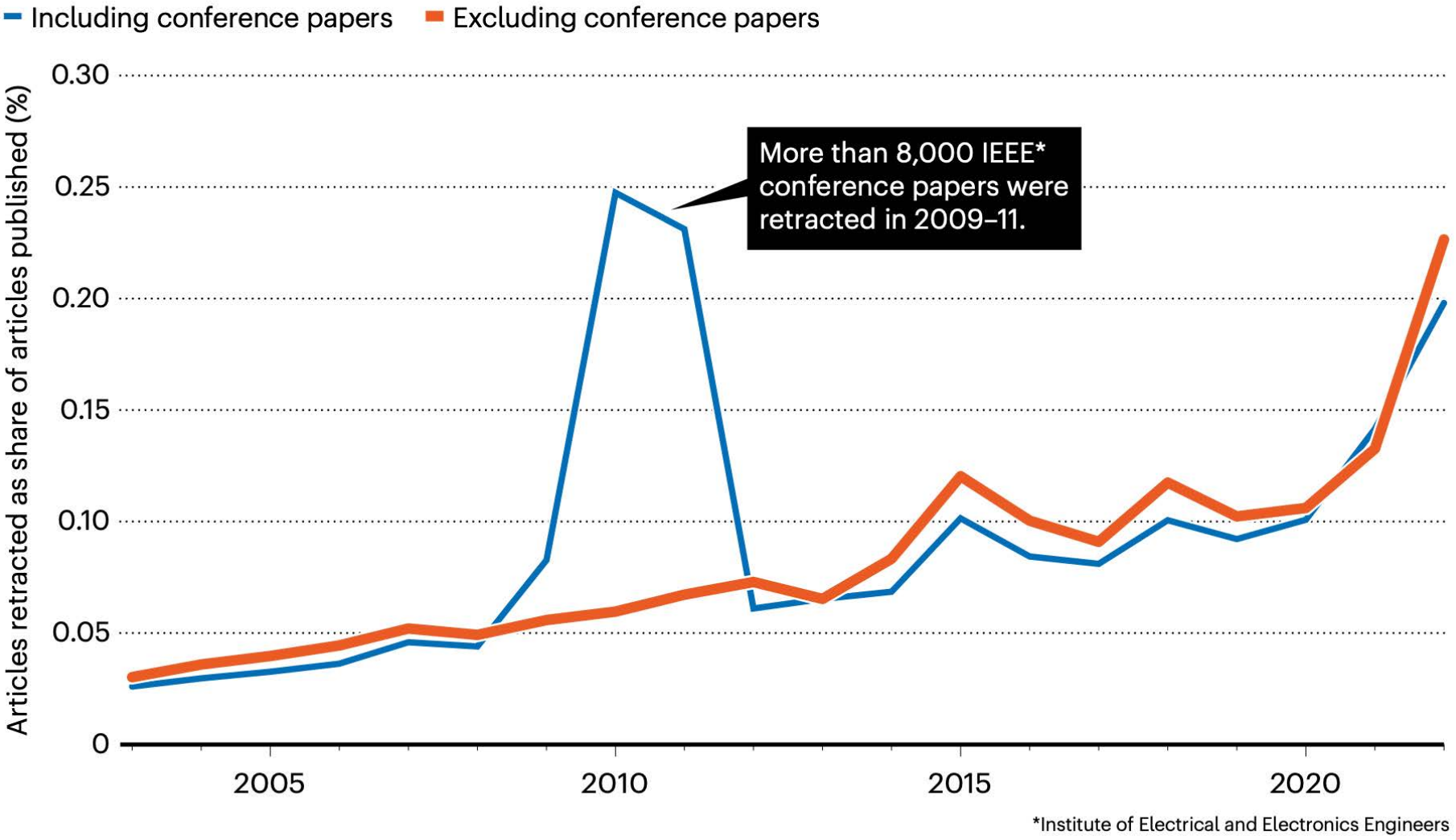
A BUMPER YEAR FOR RETRACTIONS

Retraction notices in 2023 have passed 10,000, largely because of more than 8,000 retractions by Hindawi.



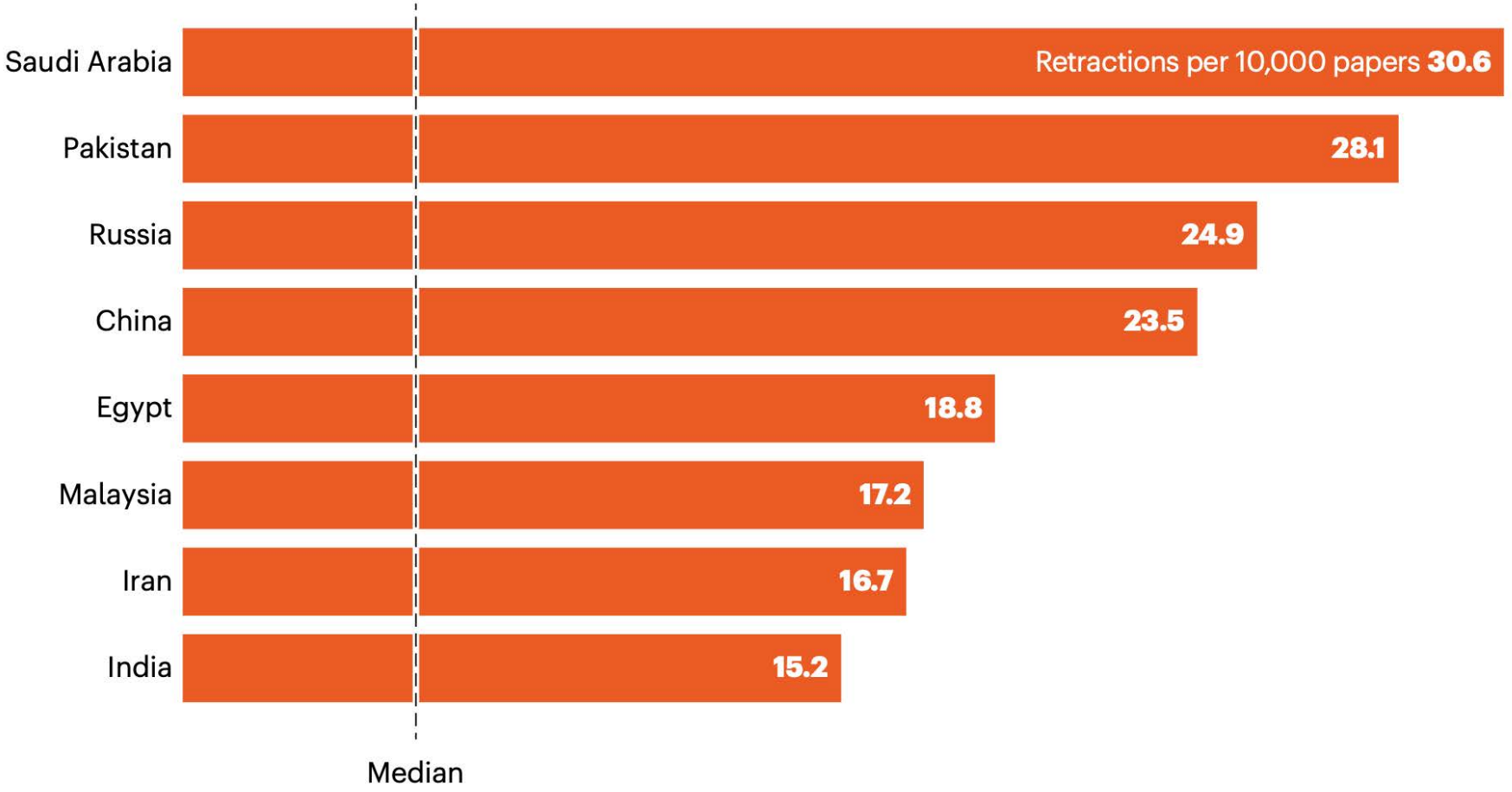
RISING RETRACTION RATES

The ratio of retracted papers to articles published has risen to above 0.2%.



COUNTRIES WITH HIGHEST RETRACTION RATES

Saudi Arabia, Pakistan, Russia and China have the highest retraction rates among countries with >100,000 papers* published over the past two decades.

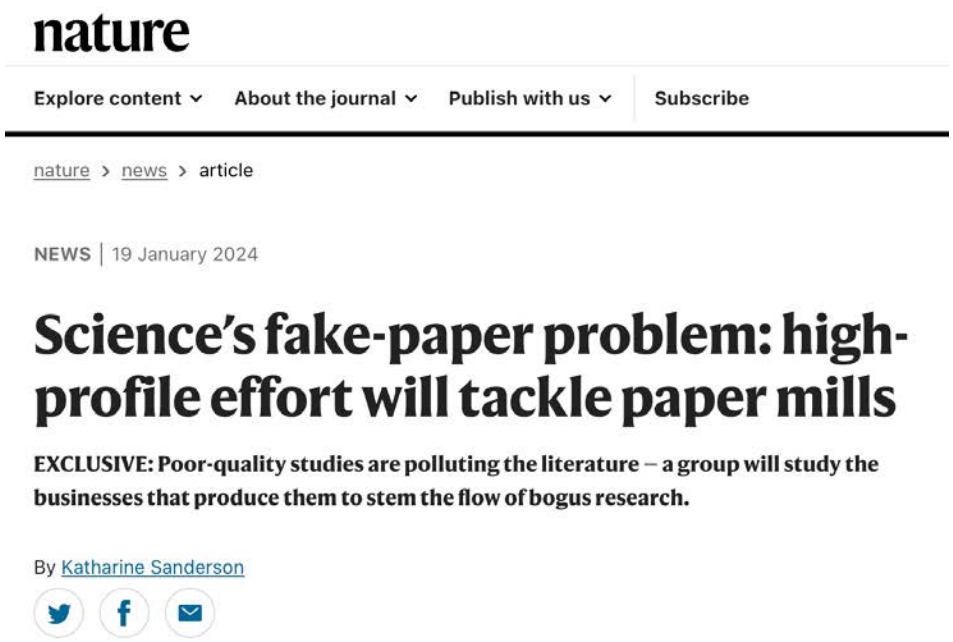


*Total number of research papers according to Scopus: articles and reviews. Analysis excludes conference papers (and their retractions)

Artikkelfabrikker («Paper mills»)

«Paper mills»

- De rundt 50.000 tilbaketrekkingene som er registrert rundt om i verden så langt, er bare toppen av isfjellet av arbeid som bør trekkes tilbake, sier integritetsdetektiver.
- Antall artikler produsert av «artikkelfabrikker» («paper mills») – bedrifter som selger falskt forskning og forfatterskap til forskere – anslås å være i hundretusener alene.
- *«Artikkelfabrikkprodukter er et problem selv om ingen leser dem, fordi de blir samlet sammen med andre i oversiktsartikler og hvitvasket i mainstream-litteraturen,»* sier David Bimler, en New Zealand-basert forskningsintegritetsdetektiv også kjent under pseudonymet Smut Clyde.



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NEWS | 19 January 2024

Science's fake-paper problem: high-profile effort will tackle paper mills

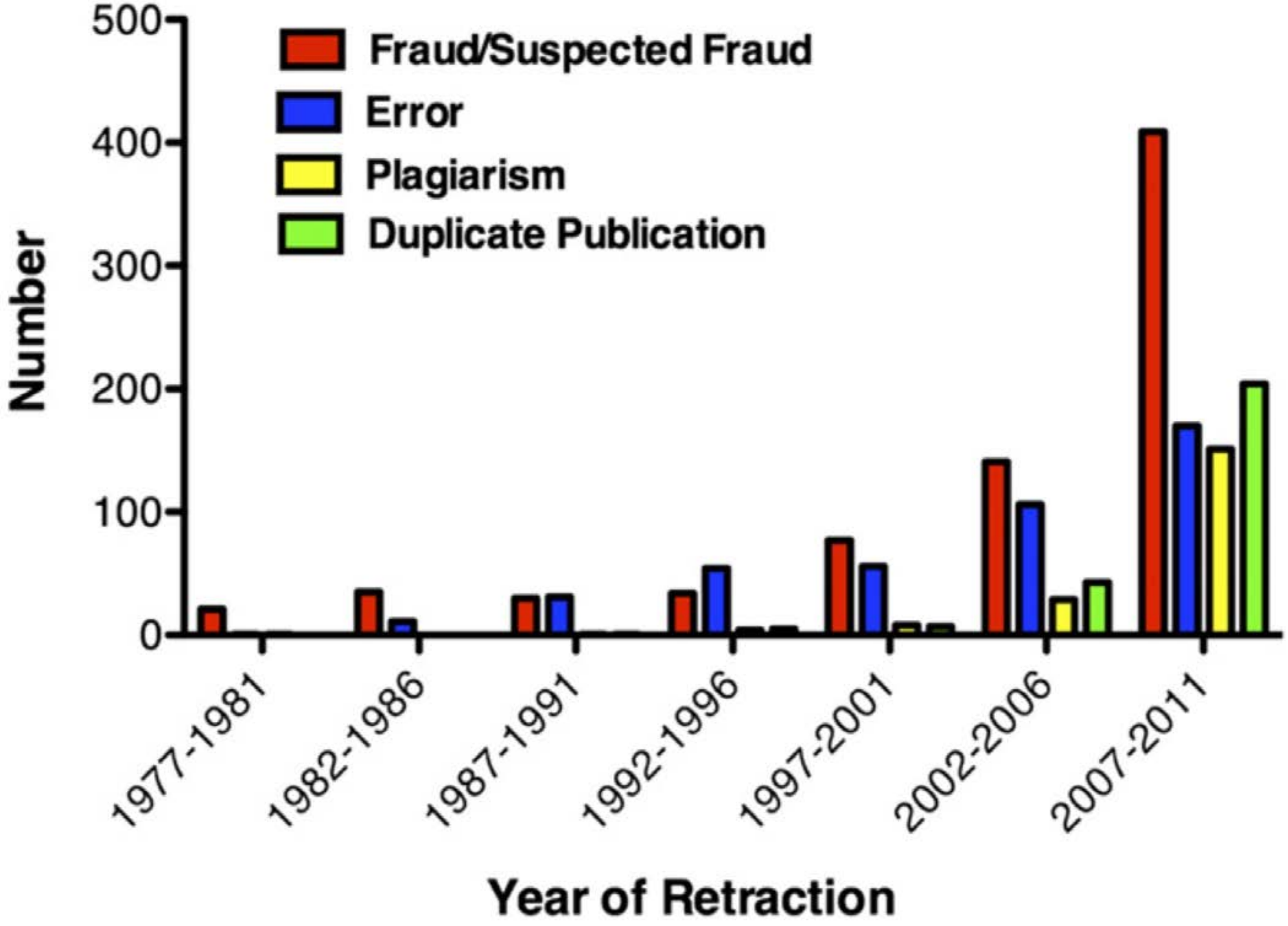
EXCLUSIVE: Poor-quality studies are polluting the literature – a group will study the businesses that produce them to stem the flow of bogus research.

By Katharine Sanderson

En høyprofilert gruppe finansiører, akademiske utgivere og forsknings-organisasjoner har lansert et forsøk på å takle et av de vanskeligste problemene innen vitenskapelig integritet:

artikkelfabrikker (paper mills), bedrifter som kverner ut falske eller dårlige tidsskriftartikler og selger forfatterskap.

I en uttalelse utgitt 19. januar [2024] skisserer gruppen hvordan den vil løse problemet gjennom tiltak som å studere artikkelfabrikker nøye, inkludert deres regionale og emnespesialiteter, og forbedre forfatterverifiseringsmetoder.



Misconduct accounts for the majority of retracted scientific publications

Ferric C. Fang[a,b,1], R. Grant Steen[c,1], and Arturo Casadevall[d,1,2]

Departments of [a]Laboratory Medicine and [b]Microbiology, University of Washington School of Medicine, Seattle, WA 98195; [c]MediCC! Medical Communications Consultants, Chapel Hill, NC 27517; and [d]Department of Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, NY 10461

Edited by Thomas Shenk, Princeton University, Princeton, NJ, and approved September 6, 2012 (received for review July 18, 2012)

A detailed review of all 2,047 biomedical and life-science research articles indexed by PubMed as retracted on May 3, 2012 revealed that only 21.3% of retractions were attributable to error. In contrast, 67.4% of retractions were attributable to misconduct, including fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%). Incomplete, uninformative or misleading retraction announcements have led to a previous underestimation of the role of fraud in the ongoing retraction epidemic. The percentage of scientific articles retracted because of fraud has increased ~10-fold since 1975. Retractions exhibit distinctive temporal and geographic patterns that may reveal underlying causes.

bibliometric analysis | biomedical publishing | ethics | research misconduct

The number and frequency of retracted publications are important indicators of the health of the scientific enterprise, because retracted articles represent unequivocal evidence of project failure, irrespective of the cause. Hence, retractions are worthy of rigorous and systematic study. The retraction of flawed publications corrects the scientific literature and also provides insights into the scientific process. However, the rising frequency of retractions has recently elicited concern (1, 2). Studies of selected retracted articles have suggested that error is more common than fraud as a cause of retraction (3–5) and that rates of retraction correlate with journal-impact factor (6). We undertook a comprehensive analysis of all retracted articles indexed by PubMed to ascertain the validity of the earlier findings. Retracted articles were classified according to whether the cause of retraction was documented fraud (data falsification or fabrication), suspected fraud, plagiarism, duplicate publication, error, unknown, or other reasons (e.g., journal error, authorship dispute).

Results

Causes of Retraction. PubMed references more than 25 million articles relating primarily to biomedical research published since the 1940s. A comprehensive search of the PubMed database in May 2012 identified 2,047 retracted articles, with the earliest retracted article published in 1973 and retracted in 1977. Hence, retraction is a relatively recent development in the biomedical scientific literature, although retractable offenses are not necessarily new. To understand the reasons for retraction, we consulted reports from the Office of Research Integrity and other published resources (7, 8), in addition to the retraction announcements in scientific journals. Use of these additional sources of information resulted in the reclassification of 118 of 742 (15.9%) retractions in an earlier study (4) from error to fraud. A list of 158 articles for which the cause of retraction was reclassified because of consultation of secondary sources is provided in Table S1. For example, a retraction announcement in *Biochemical and Biophysical Research Communications* reported that "results were derived from experiments that were found to have flaws in methodological execution and data analysis," giving the impression of error (9). However, an investigation of this article conducted by Harvard University and reported to the Office of Research Integrity indicated that "many instances of data fabrication and falsification were found" (10). In another example, a retraction notice published by the authors of a manuscript in the *Journal of Cell Biology* stated that "In follow-up experiments . . . we have shown that the lack of FOXO1a expression reported in figure 1 is not correct" (11). A subsequent report from the Office of Research Integrity states that the first author committed "research misconduct by knowingly and intentionally falsely reporting . . . that FOXO1a was not expressed . . . by selecting a specific FOXO1a immunoblot to show the desired result" (12). In contrast to earlier studies, we found that the majority of retracted articles were retracted because of some form of misconduct, with only 21.3% retracted because of error. The most common reason for retraction was fraud or suspected fraud (43.4%), with additional articles retracted because of duplicate publication (14.2%) or plagiarism (9.8%). Miscellaneous reasons or unknown causes accounted for the remainder. Thus, for articles in which the reason for retraction is known, three-quarters were retracted because of misconduct or suspected misconduct, and only one-quarter was retracted for error.

Temporal Trends. A marked recent rise in the frequency of retraction was confirmed (2, 13), but was not uniform among the various causes of retraction (Fig. 1*A*). A discernible rise in retractions because of fraud or error was first evident in the 1990s, with a subsequent dramatic rise in retractions attributable to fraud occurring during the last decade. A more modest increase in retractions because of error was observed, and increasing retractions because of plagiarism and duplicate publication are a recent phenomenon, seen only since 2005. The recent increase in retractions for fraud cannot be attributed solely to an increase in the number of research publications: retractions for fraud or suspected fraud as a percentage of total articles have increased nearly 10-fold since 1975 (Fig. 1*B*).

Geographic Origin and Impact Factor. Retracted articles were authored in 56 countries, and geographic origin was found to vary according to the cause for retraction (Fig. 2). The United States, Germany, Japan, and China accounted for three-quarters of retractions because of fraud or suspected fraud. China and India collectively accounted for more cases of plagiarism than the United States, and duplicate publication exhibited a pattern similar to that of plagiarism. The relationship between journal impact factor and retraction rate was also found to vary with the cause of retraction. Journal-impact factor showed a highly significant correlation with retractions because of fraud or error but not with those because of plagiarism or duplicate publication (Fig. 3 *A–C*). Moreover, the mean impact factors of journals retracting articles

Author contributions: F.C.F., R.G.S., and A.C. designed research, performed research, analyzed data, and wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

[1]F.C.F., R.G.S., and A.C. contributed equally to this work.

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www.pnas.org/cgi/doi/10.1073/pnas.1212247109

FORSKNINGSJUKS

Norsk forsker sentral i storstilt avdekking av kinesisk «papirmølle»

Skal ha produsert minst 400 forskningsartikler på bestilling.

A single ‘paper mill' appears to have churned out 400 papers, sleuths find

Problematic images abound in papers linked to Chinese institutions

27 FEB 2020 • BY DALMEET SINGH CHAWLA

SCIENCEINSIDER | SCIENTIFIC COMMUNITY

Russian site peddles paper authorship in reputable journals for up to $5000 a pop

Advertisements promised adding names to articles that appeared in dozens of journals

6 APR 2022 · 10:30 AM · BY DALMEET SINGH CHAWLA

NATURE INDEX | 09 December 2020

Auto articles: an experiment in AI-generated content

AI-generated summaries of three articles selected from a data set of 175 Springer Nature publications.

Catherine Armitage & Markus Kaindl

• Artificial Intelligence

This Research Does Not Exist: AI Generated Science Papers that Read Like the Real Thing

Posted on 29 April 2020

Vår oppfatning av kunnskap «under angrep»(?)

Dramatiske omveltninger i samfunnet om hva vi tenker om kunnskap

- Vi – i alle fall de fleste av oss, enn så lenge – som er forskere og forfattere har vokst opp med en klar oppfatning av hva som er god kvalitet – gjennom forlag, fagfellevurderte tidsskrifter og bøker, lesing av tekster, praktisering av kildekritikk, etc.
- Vi får nå et økende antall personer som ikke har vokst opp med denne forståelsen – de vet ikke hva som er god kvalitet.
- Deres forståelse er hentet fra YouTube, X (Twitter), Tiktok, Facebook, Instagram, blogger, nettbaserte informasjonskanaler, ChatGBT m.fl. (generative KI systemer), og ikke kvalitetssikrede informasjonskanaler.

Språk – norsk eller engelsk?

- (Det meste av) forskning publiseres på engelsk.
- Engelsk er det eneste som gjelder mht formidling av forskning innen medisin, helse og STEM fagene. Innen disse fagene finnes det ingen(?) anerkjente publikasjonskanaler på norsk.
- Alle forskere forsøker å publisere sin forskning i de mest prestisjefulle tidsskriftene.

Algoritmebaserte kunnskapssøk

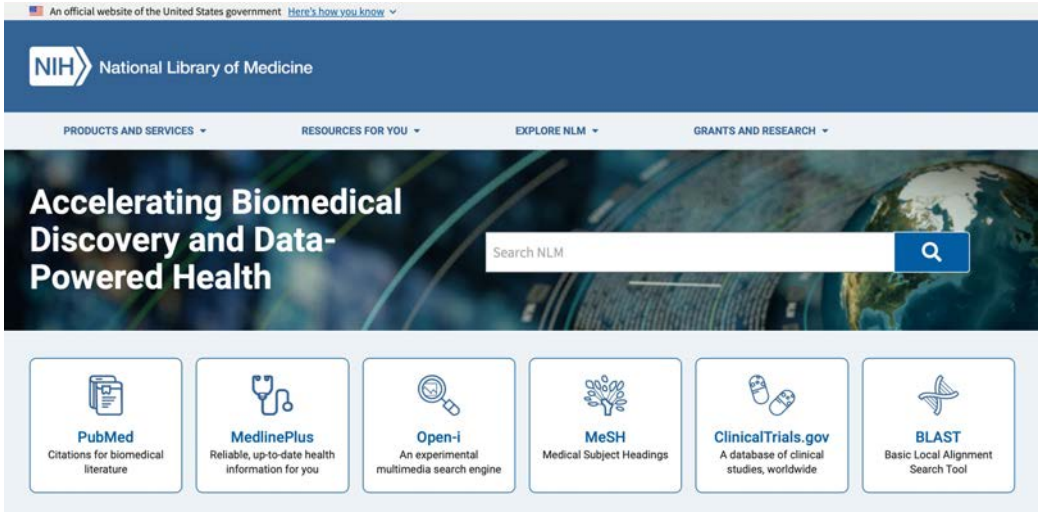
- De fleste (alle?) anvender søkemotorer (først og fremst Google) til «brede» kunnskapssøk
- Algoritmene gir ikke alltid korrekte eller optimale resultater
- Algoritmene «tenker ikke utenfor boksen»
- Algoritmene gir tilnærmet de samme svar
- Vi har ingen garanti for at resultatene er «manipulert»

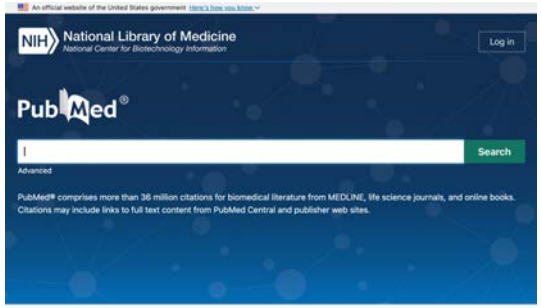
Algoritmebaserte kunnskapssøk

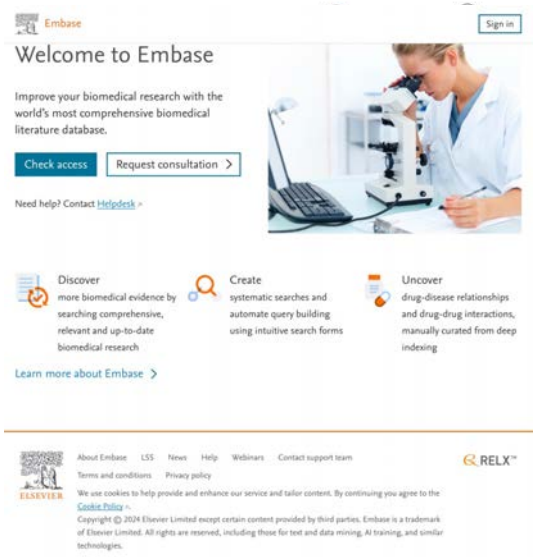
- (Potensielt) problematisk: Vi får kun svar på det vi etterspør
- Vi kan gå glipp av kunnskap i eller utenfor «randsonen» av søket
- Professor Rolf Seljelid: Fortalte en gang at han hadde én biblioteksdag i uka – plukket ofte opp tidsskrifter og bøker innen andre områder basert på en interessant forside eller tittel. Dette var publikasjoner som han ikke ville kommet over gjennom et målrettet søk.

Hvordan finne fram i forskningen?

- Forskere søker i anerkjente biblioteksdatabaser







UiT Universitetsbiblioteket

ENG MENY

Oria | Databaser | e-tidsskrifter | Pensum | Munin

Søk etter bøker, tidsskrift, artikler m.m.

Eks: Lord of the rings

Logg på Oria / UNN-ansatte

Avansert søk / Søkehjelp?

I DAG

Bibliotek	Betjent	Selvbetjent
Alta	09:00–15:00	08:00–23:00
Hammerfest	08:30–15:45	08:00–00:00
Harstad	10:00–15:00	Døgnåpent
Kultur- og samfunnsfag	08:00–21:00	07:00–21:00
Kunstakademiet	-	06:00–00:00
Museet	10:00–14:00	-
Musikk	09:00–17:00	-
Narvik	10:00–15:00	08:00–23:00
Natur- og helsefag	10:00–16:00	07:00–23:00
Psykologi og jus	10:00–14:00	07:00–23:00

Alle våre åpningstider

Foto:
mostphotos.com

Våre bibliotek | Kurs og undervisning | Fagsider

Alt om lån
Låne, bestille, fornye og returnere bøker

Søkehjelp
Få hjelp til litteratursøk i Oria og databaser, finn pensum eller bestill søkehjelp fra biblioteket.

Nyttige ressurser
Ordbøker og oppslagsverk, tilgang til Nasjonalbiblioteket, tilrettelegging, andre nyttige apper

Ny på biblioteket?
Nyttig informasjon om biblioteket og tjenestene våre.

Jobbe hjemmefra
Bestille bøker hjem og tilgang til bibliotekets nettressurser hjemmefra.

Studere, skrive og referere
Studieteknikk, kildebruk, eksempelsamlinger, maler, innlevering av masteroppgave

Forske og publisere
Forskningsdata, Open Access publisering og prosjektsøknader

Skrive senteret | High North Academy | UiT Result

Bli låner | Utskrift, kopiering og skanning | Min konto Oria

EndNote | Referansestiler | e-aviser

Kontakt oss

UiT Universitetsbiblioteket

ENG MENY

MEDISIN

Våre bibliotek | Kurs og undervisning | Fagsider

Universitetsbiblioteket / Fagsider / Medisin

Medisin

Viktige ressurser

De blå boksene lenker til nyttige ressurser. Først tre ressurser innen medisin Medline, Embase og PubMed. Etter det lenker til fire av de beste læringsressursene innen anatomi, fysiologi og patologi.

- Medline fra OvidSP
- Embase fra OvidSP
- PubMed
- Anatomy.Tv
- Thieme teaching assistant
- Thieme pocket atlas of kolleksjonen
- Heart and lung sounds app
- Helsebiblioteket

Fagansvarlig

Reierth, Eirik

Natur- og helsefagbiblioteket

Førstebibliotekar. Dr. Scient.

+4777644693

eirik.reierth@uit.no

Her finner du meg:

Tromsø

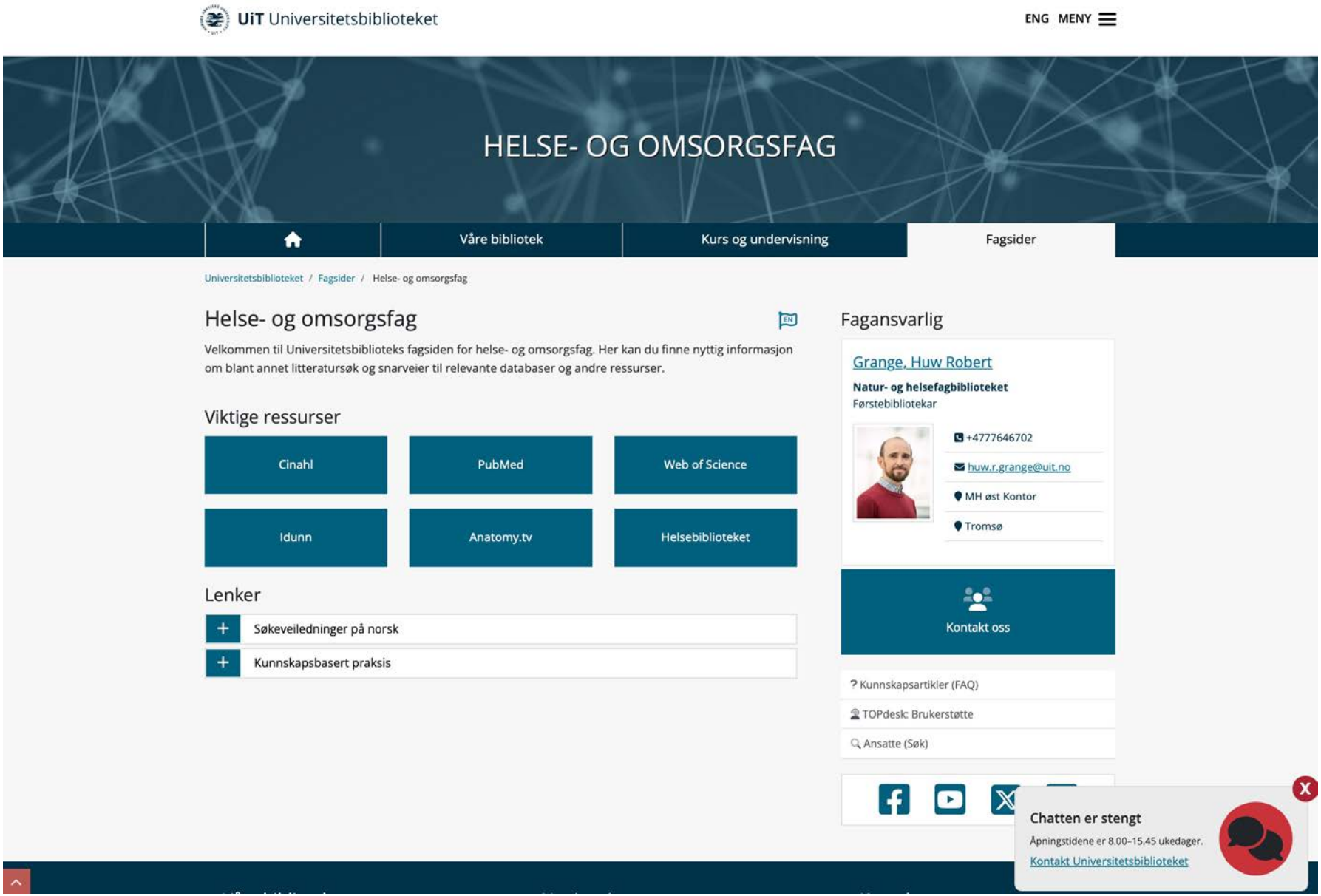
Kontakt oss

- Kunnskapsartikler (FAQ)
- TOPdesk: Brukerstøtte
- Ansatte (Søk)

Chatten er stengt

Åpningstidene er 8.00–15.45 ukedager.

Kontakt Universitetsbiblioteket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HELSE- OG OMSORGSFAG
Våre bibliotek
Kurs og undervisning
Fagsider
Universitetsbiblioteket / Fagsider / Helse- og omsorgsfag
Helse- og omsorgsfag
Velkommen til Universitetsbiblioteks fagsiden for helse- og omsorgsfag. Her kan du finne nyttig informasjon om blant annet litteratursøk og snarveier til relevante databaser og andre ressurser.
Viktige ressurser
Cinahl
PubMed
Web of Science
Idunn
Anatomy.tv
Helsebiblioteket
Lenker
Søkeveiledninger på norsk
Kunnskapsbasert praksis
Fagansvarlig
Grange, Huw Robert
Natur- og helsefagbiblioteket
Førstebibliotekar
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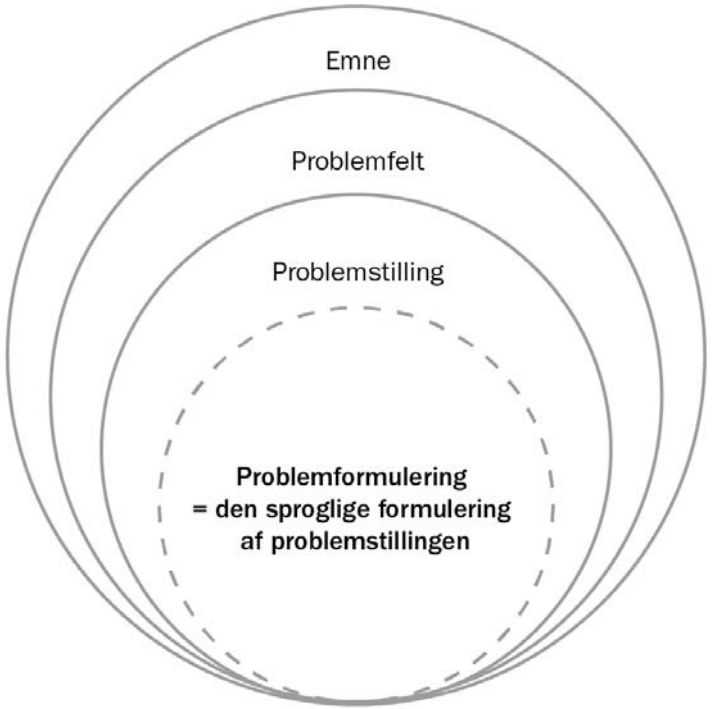
Kontakt oss
Kunnskapsartikler (FAQ)
TOPdesk: Brukerstøtte
Ansatte (Søk)
Chatten er stengt
Åpningstidene er 8.00–15.45 ukedager.
Kontakt Universitetsbiblioteket

Hvilke problemer gjenstår å løse?

- Anbefalt fremgangsmåte: gjennomfør en

Problemanalyse



Figur 2.1. Emne, problemfelt, problemstilling, problemformulering.

Fra: Poul Bitsch Olsen og Kaare Pedersen: *Problemorienteret projektarbejde*, 5. udg.

Hva er problemet?

“If one wants to solve a [research] problem, one must generally know what the problem is”

(Kerlinger and Lee, 2000, p. 24 i Ellis and Levy, 2008)

Informing Science: the International Journal of an Emerging Transdiscipline Volume 11, 2008

Framework of Problem-Based Research: A Guide for Novice Researchers on the Development of a Research-Worthy Problem

Timothy J. Ellis and Yair Levy
Nova Southeastern University
Graduate School of Computer and Information Sciences
Fort Lauderdale, Florida, USA

Hva er problemet?

“The identification of the research problem is the most difficult and important part of the whole [research] process! ”

(Kerlinger and Lee, 2000, p. 15 i Ellis and Levy, 2008)

Informing Science: the International Journal of an Emerging Transdiscipline Volume 11, 2008

**Framework of Problem-Based Research:
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Peer review krise

- Kvaliteten forvitrer pga mangel på fagfeller til å vurdere forskningen
- Incentivene for å bidra med «peer review» har forvitret, og til og med forsvunnet
- Forskere gjør alt gratis – skriver vitenskapelige artikler, vurdere kvaliteten på disse, betaler for å få publisere resultatene.
- (Forlagene som publiserer vitenskapelige artikler genererer store overskudd)

Open access

Internasjonal trend:

- Bort fra GULL – forskeren betaler for publisere, gratis å lese
- Til DIAMANT – fullfinansierte publikasjonskanaler – gratis å publisere og gratis å lese

Green, Gold, Diamond, Black – what does it all mean?

Academic Publishing • Oct 22, 2018
https://doi.org/10.11647/OBP.0173.0089
Lucy Barnes https://orcid.org/0000-0002-1425-6985

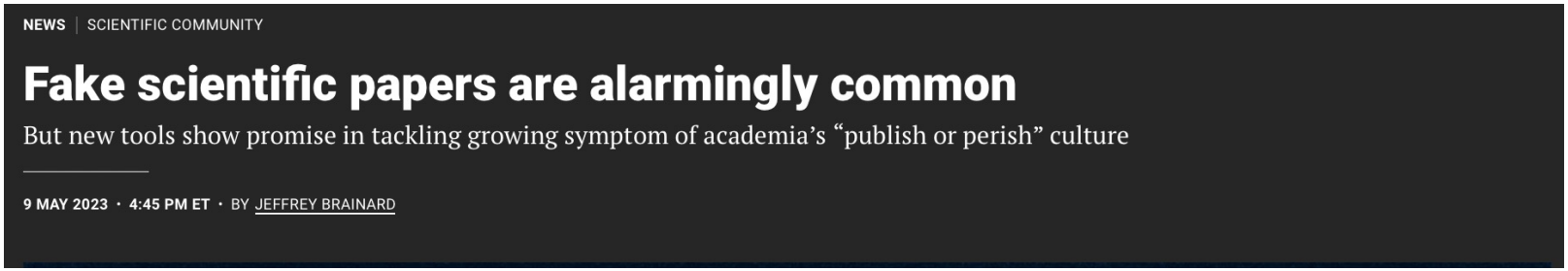
There's a lot of jargon surrounding Open Access publication, and as with all jargon it can confuse and obfuscate. Here is a simple glossary:

Diamond / Platinum	Immediate Open Access publication by the journal or book publisher without payment of a fee. Copyright may be retained by the author and permission barriers to share or reuse are generally removed. OBP fits this description: our authors retain their copyright, and we recommend this as best practice. We recommend a CC BY licence for all our books, unless an author chooses a more restrictive licence.
Gold	Immediate Open Access publication by the journal or book publisher. In some cases, a fee is charged. Copyright may be retained by the author and permission barriers to share or reuse are generally removed.
Bronze	The content is free to read and/or download on the publisher's website, but it is not published under an open licence that permits sharing or reuse. The publisher is able to withdraw access at any time. This form of so-called 'Open' Access is often used to make content free to read for only a brief period, perhaps immediately after publication or in response to a catastrophic event such as the COVID-19 pandemic. However, since there is no open license it is not, in fact, Open Access at all.
Green	A version of the publication is archived online, e.g. in a repository. It does not include any of the work typically carried out by the publisher, such as e.g. copyediting, proofreading, typesetting, indexing, metadata tagging, marketing or distribution. It is usually not listed on the publisher's website. It can be freely accessed but sometimes only after an embargo period, and there can be barriers to reuse. The author usually does not retain the copyright.
Black	A publication that is not openly licensed, or for which reuse rights have not been granted, which is shared online illegally (e.g. via Sci-Hub).
Hybrid	'Hybrid' is usually applied to journals. A hybrid journal is a subscription journal in which some articles are made Open Access on payment of a fee. This model has attracted particular criticism for its expense and its vulnerability to abuses such as 'double dipping. Some book publishers offer chapter-level Open Access, particularly for collected and edited volumes. These are sometimes referred to as 'hybrid books'.
Gratis	Open Access that is free to read, but there are barriers to reuse.
Libre	Open Access is free to read and permission barriers are generally removed.

https://blogs.openbookpublishers.com/green-gold-diamond-black-what-does-it-all-mean/

Tekstgeneratorene kommer

- Fake science – hvordan sikre kvaliteten?



NEWS | SCIENTIFIC COMMUNITY

Fake scientific papers are alarmingly common

But new tools show promise in tackling growing symptom of academia's "publish or perish" culture

9 MAY 2023 · 4:45 PM ET · BY JEFFREY BRAINARD

'The situation has become appalling': fake scientific papers push research credibility to crisis point

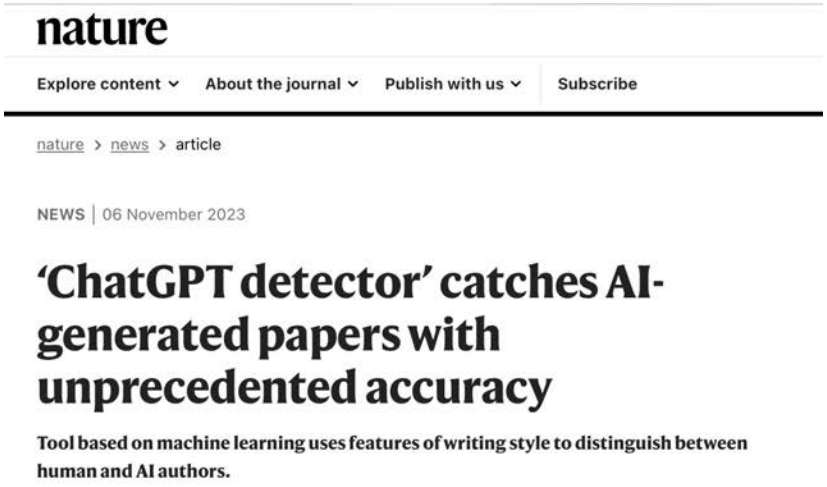
Last year, 10,000 sham papers had to be retracted by academic journals, but experts think this is just the tip of the iceberg

Tekstgeneratorene kommer

- Et par forskere har produsert en forskningsartikkel på under en time ved hjelp av ChatGPT – et verktøy drevet av kunstig intelligens (AI) som kan forstå og generere menneskelignende tekst.
- Artikkelen var flytende, innsiktsfull og presentert i den forventede strukturen for et vitenskapelig papir, men forskere sier at det er mange hindringer å overvinne før verktøyet kan være virkelig nyttig.

Tekstgeneratorene kommer

- Et maskinlæringsverktøy kan lett oppdage når kjemiartikler skrives ved hjelp av chatboten ChatGPT, ifølge en studie publisert 6. november i *Cell Reports Physical Science*.
- Den spesialiserte klassifisereren, som utkonkurrerte to eksisterende detektorer for kunstig intelligens (AI), kan hjelpe akademiske utgivere med å identifisere artikler opprettet av AI-tekstgeneratorer.



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NEWS | 06 November 2023

'ChatGPT detector' catches AI-generated papers with unprecedented accuracy

Tool based on machine learning uses features of writing style to distinguish between human and AI authors.

Fake scientific papers are alarmingly common

- Da nevropsykolog Bernhard Sabel satte sin nye detektor for falske artikler i arbeid, ble han "sjokkert" over hva den fant. Etter å ha gjennomgått rundt 5000 artikler, anslår han at opptil 34 % av nevrovitenskapelige artikler publisert i 2020 sannsynligvis var oppdiktet eller plagiert; I medisin var tallet 24%.
- Begge tallene, som han og kolleger rapporterer i et medRxiv-preprint lagt ut 8. mai 2023, er godt over nivåene de beregnet for 2010 – og langt større enn grunnlinjen på 2% estimert i en 2022-utgivergrupperapport.
- "Det er bare for vanskelig å tro", sier Sabel ved Otto von Guericke University Magdeburg og redaktør i *Restorative Neurology and Neuroscience*. Det er som om «noen forteller deg at 30% av det du spiser er giftig».

https://www.science.org/content/article/fake-scientific-papers-are-alarmingly-common

Papir vs digitalt?

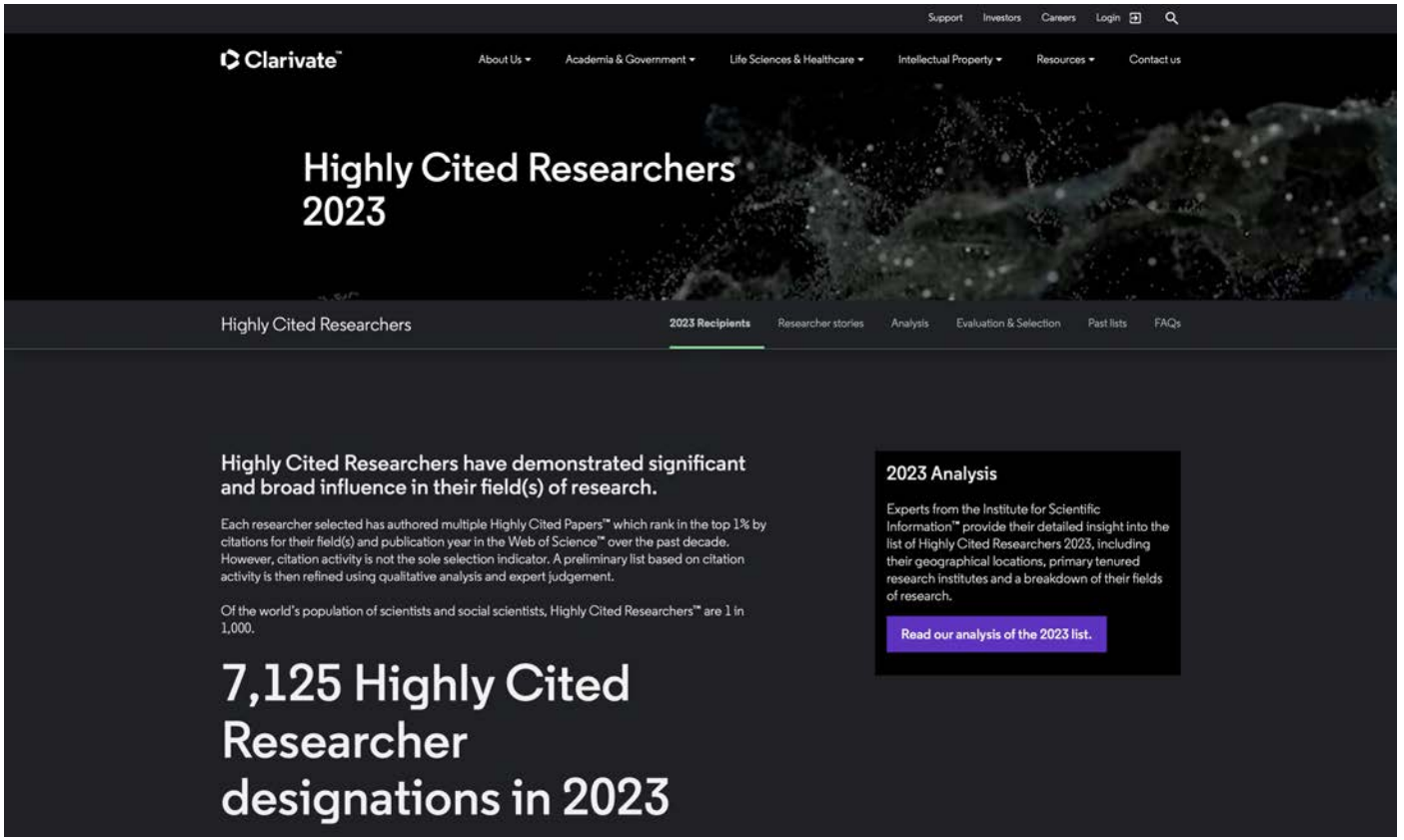
Studentene:

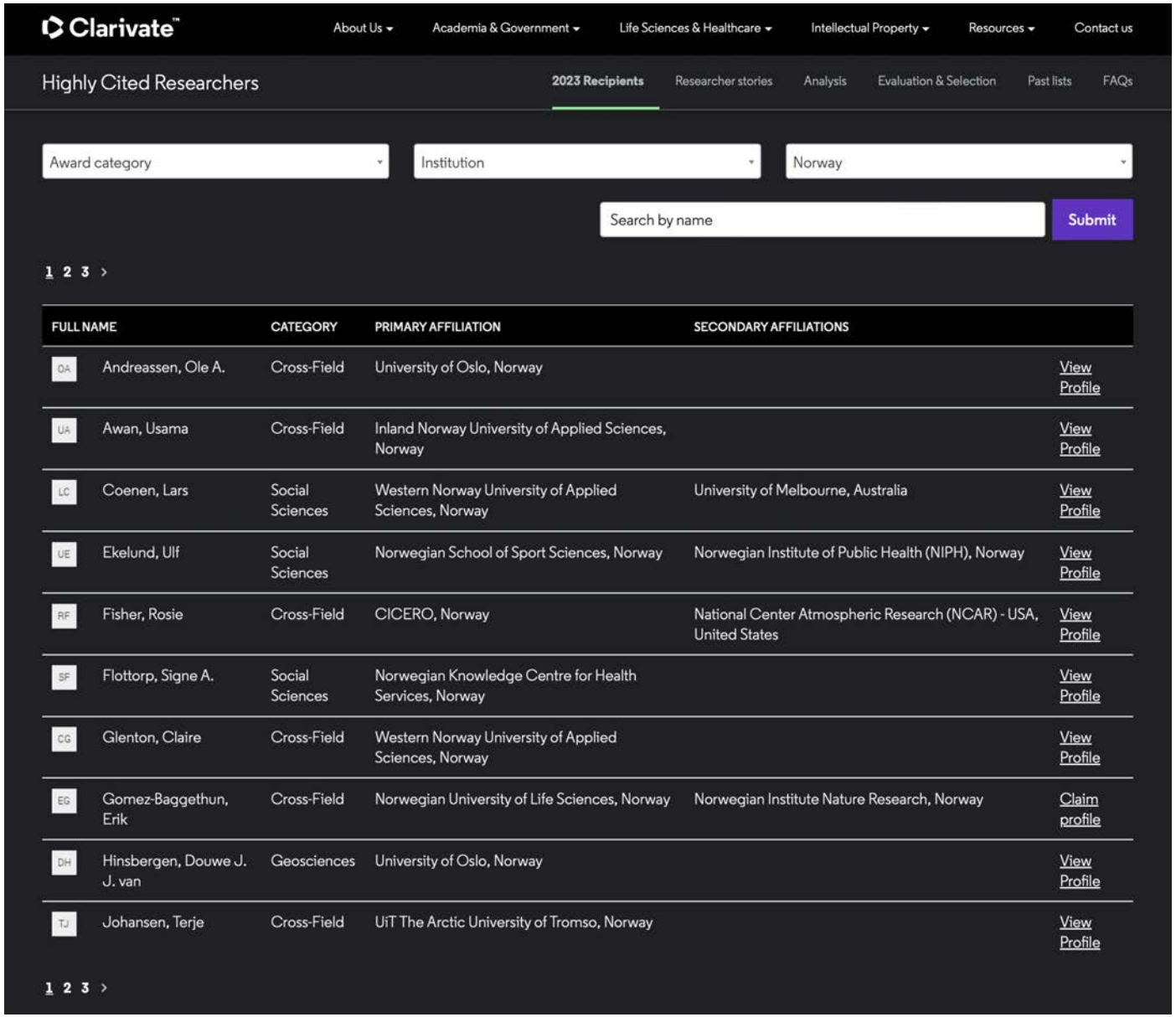
- 1/3 ønsker kun papir
- 1/3 ønsker papir og digitalt
- 1/3 ønsker kun digitalt

Du vet at forskningen din er utmerket når ...

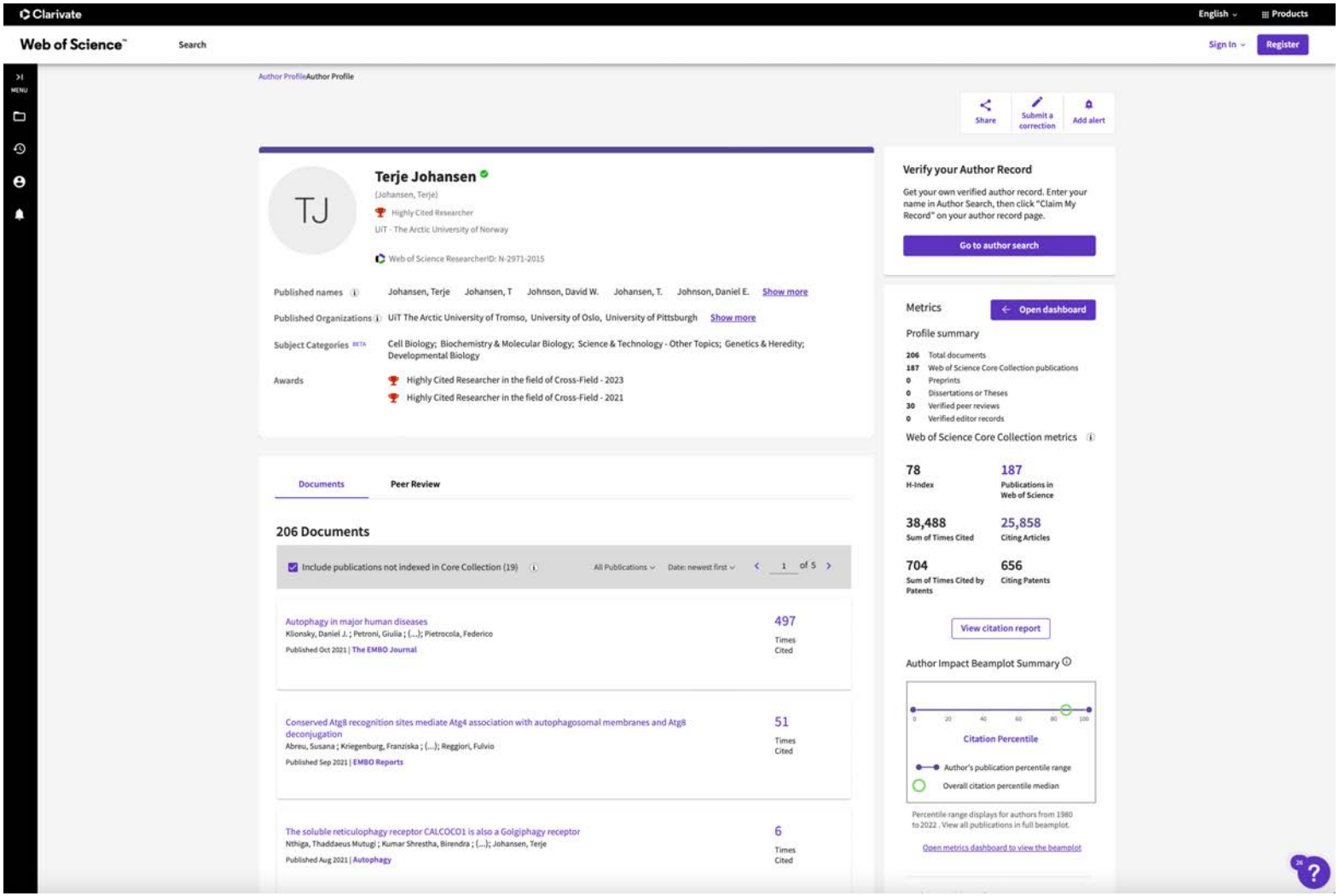
… dine artikler er akseptert i de mest prestisjefylte tidsskrifter

… du er blant verdens mest siterte





25 forskere fra Norge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Published names
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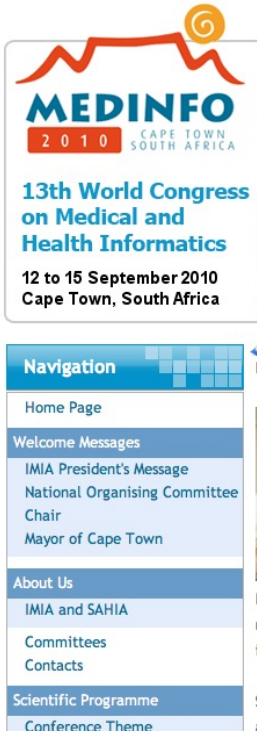
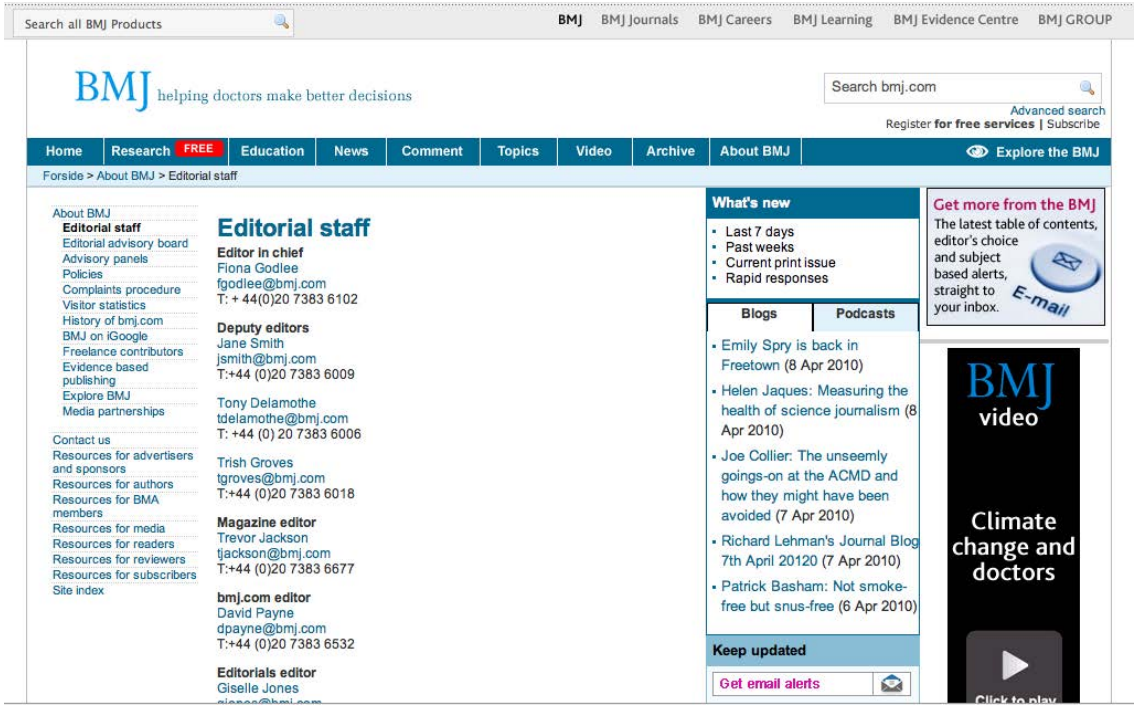
Highly Cited Researcher in the field of Cross-Field - 2021
Documents
Peer Review
206 Documents
Include publications not indexed in Core Collection (19)
All Publications
Date: newest first
1 of 5
Autophagy in major human diseases
Klionsky, Daniel J. ; Petroni, Giulia ; (...); Pietrocola, Federico
Published Oct 2021 | The EMBO Journal
497
Times Cited
Conserved Atg8 recognition sites mediate Atg4 association with autophagosomal membranes and Atg8 deconjugation
Abreu, Susana ; Kriegenburg, Franziska ; (...); Reggiori, Fulvio
Published Sep 2021 | EMBO Reports
51
Times Cited
The soluble reticulophagy receptor CALCOCO1 is also a Golgiphagy receptor
Nthiga, Thaddaeus Mutugi ; Kumar Shrestha, Birendra ; (...); Johansen, Terje
Published Aug 2021 | Autophagy
6
Times Cited
Verify your Author Record
Get your own verified author record. Enter your name in Author Search, then click "Claim My Record" on your author record page.
Go to author search
Metrics
Open dashboard
Profile summary
206 Total documents
187 Web of Science Core Collection publications
0 Preprints
0 Dissertations or Theses
30 Verified peer reviews
0 Verified editor records
Web of Science Core Collection metrics
78
H-Index
187
Publications in Web of Science
38,488
Sum of Times Cited
25,858
Citing Articles
704
Sum of Times Cited by Patents
656
Citing Patents
View citation report
Author Impact Beamplot Summary
0
20
40
60
80
100
Citation Percentile
Author's publication percentile range
Overall citation percentile median
Percentile range displays for authors from 1980 to 2022 . View all publications in full beamplot.
Open metrics dashboard to view the beamplot

… du blir invitert som keynote til en høyt ranger internasjonal konferanse



… du blir forespurt om å bli “editor” eller “member of editorial board” i et høyt rangert tidsskrift



… du mottar eposter fra potensielle postdoktorer og ph.d. studenter som ønsker samarbeid

… du mottar eksterne forskningsmidler

… andre internasjonale forskere ønsker deg velkommen i sin forskergruppe

… du inviteres med på andre forskeres forskningsprosjekter

… du tildeles en Nobelpris for din forskning

… du inviteres som gjesteforeleser ved et av verdens beste universiteter

… du mottar forespørsler om å delta i vurdering av forskningssøknader

… du blir headhunted til en prestisjefylt stilling (“endowed chair”)

… “Your research is hot”

… forskningen din mottar ulike utmerkelser

… navnet ditt havner på et frimerke eller en pengeseddel

... Time Magazine utroper deg til «Person of the century»

“Many people say that it is the intellect which makes a great scientist.

They are wrong: it is *character*”

-Albert Einstein

… dine bøker utgis på flere språk

Professor Johan Galtung klar med bok
nr 109 (mai 2003)

Barneboken «En flyveappelsin forteller» handler om konfliktløsning.

Boken «Både og» er utgitt på 20 språk og presenterer 40 eksempler på konfliktløsning hentet fra hans karriere.

Spørsmål?

gunnar.hartvigsen@uit.no

gunnar.hartvigsen@helgelandssykehuset.no

FORSKERHÅNDBOKEN