



How to write a great research paper

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Bandung, October 2015



Origins of Scholarly Publishing



1439
Gutenberg and moveable type



Henry
Oldenburg
(1618- 1677)
Founding Editor
and Commercial
Publisher of the
first scientific
journal

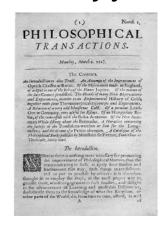


1580
Founding of the House of Elzevir



March 6,1665
Philosophical
Transactions of
the Royal Society

First true scholarly journal





Historical View of Scholarly Publishing



Scholarly Publishing Today

Scientific, Technical and Medical communities around the world are united through STM Publishing



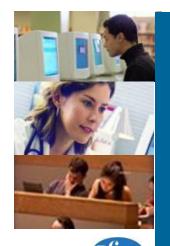


Role of scientific publications

The timestamp to officially note who Registration submitted scientific results first Perform peer-review to ensure the Certification validity and integrity of submissions Provide a medium for discoveries and Dissemination findings to be shared Preserving the minutes and record of Preservation science for posterity Promoting and facilitating the use of Use scholarly information

Who we serve

Publishers support the greater scientific and health communities



Researchers

Health Practitioners

Faculty & Students

Pharma Companies

Librarians

Societies

Engineers

Professionals

General Public

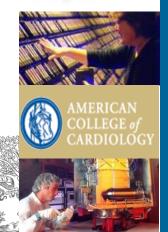


7,000 Editors

70,000 Editorial Board Members

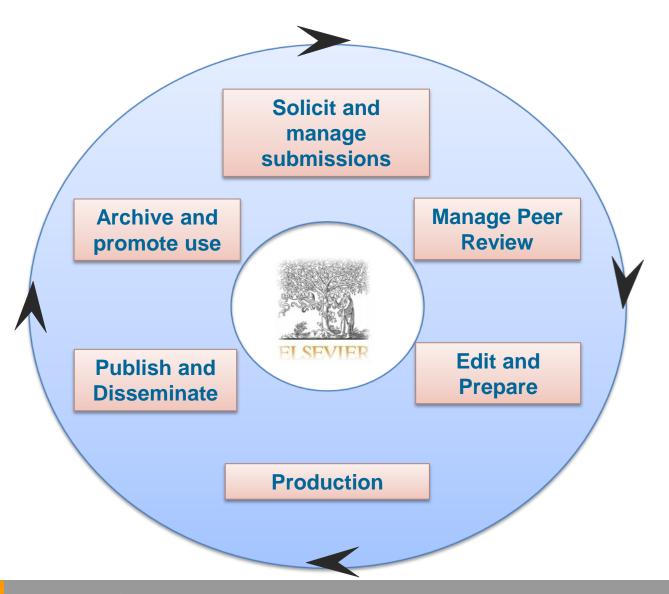
570,000+ Referees

650,000+ Authors



Boehringer

The journal publishing cycle

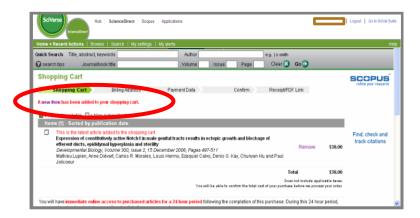


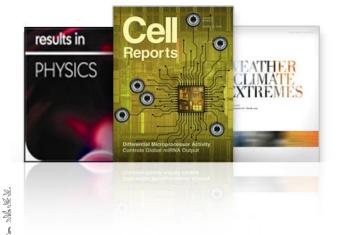


Journal publishing models

Traditional publishing

- Authors publish free of charge
- Institutions or individuals subscribe to journals





Open access publishing

- Article is made freely available to all online
- Some journals publish exclusively open access
- Other subscription journals offer open access options

What is open access?

- Free and permanent access to scholarly research
- combined with clear guidelines (user licenses) for users to reuse the content.

Gold open access

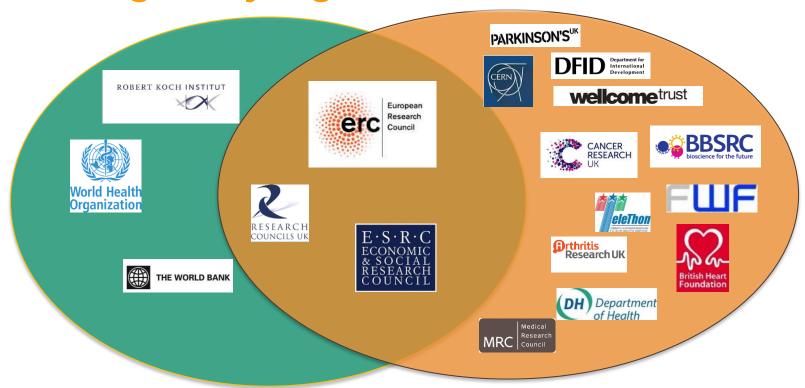
- After submission and peer review, an article publishing charge (APC) is payable
- Upon publication everyone can immediately and permanently access the article online

Green open access

- After submission and peer review in a subscription journal, the article is published online
- Subscribers have immediate access and the article is made open access either through author self-archiving, publisher deposit or linking.



Funding Body Agreements



Green agreements

- Facilitates sustainable green open access
- Immediate internal posting on repositories
- Public access to the author accepted manuscript after embargo

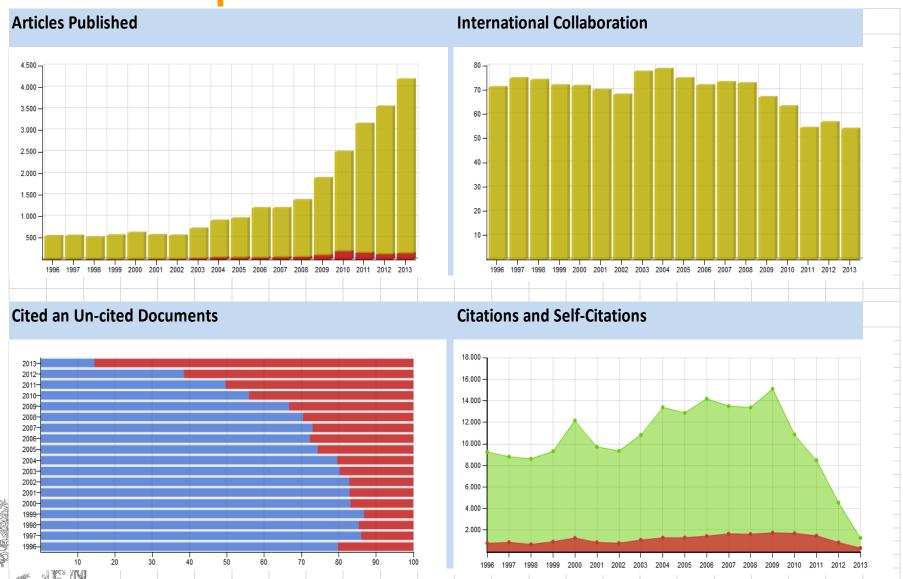
Mixed agreement combination of both green and gold

Gold agreements

- Help establish automation of workflows to streamline author experience
- Can include reporting to funding organisation on uptake
- Compliance is higher when combined with clear funding for APCs.

Articles published in Indonesia SUR

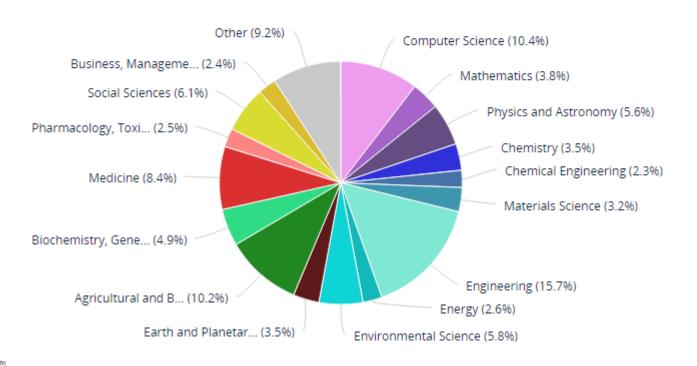




Research performance Indonesia



Use View list of publications





Institutions in Indonesia

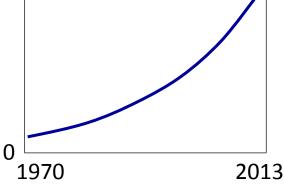
Inst	titution	Publications 束	Authors	Citations
1.	Bandung Institute of Technology	2,731 🔺	2,499 🔺	3,635
2.	University of Indonesia	2,051 🔺	2,061 🔺	4,724
3.	Gadjah Mada University	1,141 🔺	1,117 🔺	2,953
4.	Institut Pertanian Bogor	938 🔺	976 🔺	2,270
5.	Institut Teknologi Sepuluh Nopember	842 🔺	890 🔺	1,027
6.	Lembaga Ilmu Pengetahuan Indonesia	668 🔺	531 🔺	1,870
7.	Brawijaya University	578 🔺	730 🔺	674
8.	Universitas Diponegoro	459 🔺	486 🔺	1,165
9.	Center for International Forestry Research, West Java	443 🛦	215 🔺	3,232
10.	Universitas Padjadjaran	409 🔺	444 🔺	1,764
11.	Universitas Hasanuddin	386 ▲	433 🔺	820
12.	Universitas Airlangga	353 ▲	403 🔺	1,107
13.	Universitas Syiah Kuala	344 ▲	252 🔺	1,243
14.	Universitas Andalas	298 ▲	341 🔺	389
15.	Universitas Udayana	291 ▲	314 🔺	567
16.	U.S. Naval Medical Research Unit No. 2, Jakarta	33 ▼	53 ▼	SciVal

You want to make sure your article gets the attention it deserves

 The volume of research articles is growing at an accelerated pace

 For most researchers, it is a real challenge to keep up with the literature

 Your job: make sure your article does not fall through the cracks!



40M

7 hrs/week – average time spend on literature



Simple but effective

- Choose the right journal
- Make sure your abstract is crystal-clear about what and why. Do not assume people will understand
- Spend quality time on your introduction and conclusions
- Do not forget your keywords
- Share your data and research
- Use easy to understand charts and professional illustrations to support your message
- Use clear and correct manuscript language

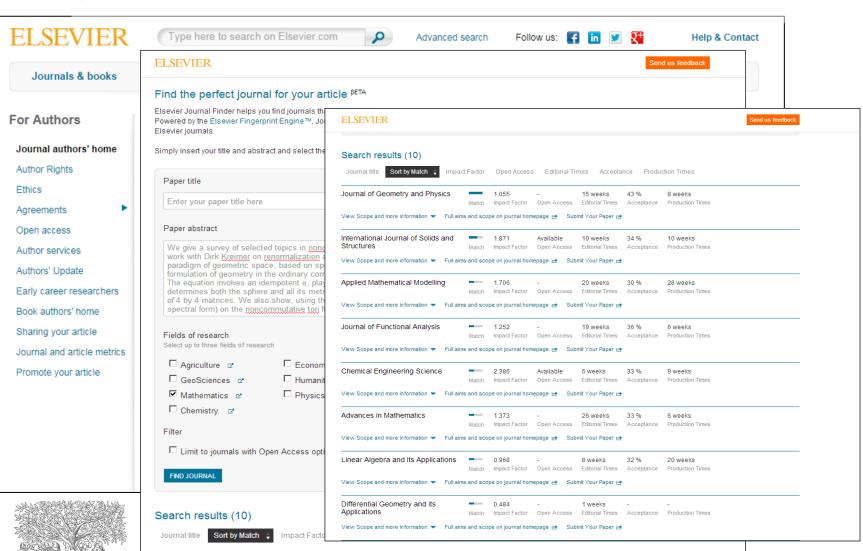
Choose the right journal

- Aim to reach the intended audience for your work
- Choose only one journal, as simultaneous submissions are prohibited
- Supervisor and colleagues can provide good suggestions
- Shortlist a handful of candidate journals, and investigate them
 - Aims & Scope
 - Accepted types of articles
 - Readership
 - Current hot topics

Articles in your reference list will usually lead you directly to the right journals

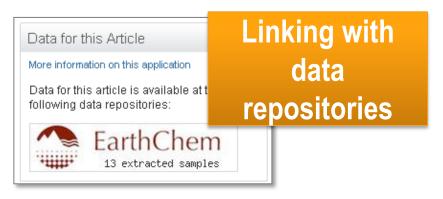


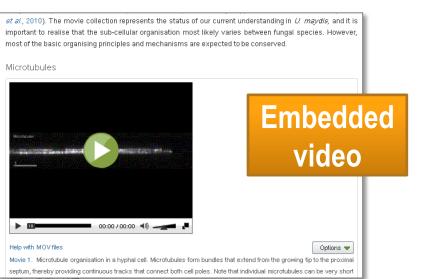
Journal Finder

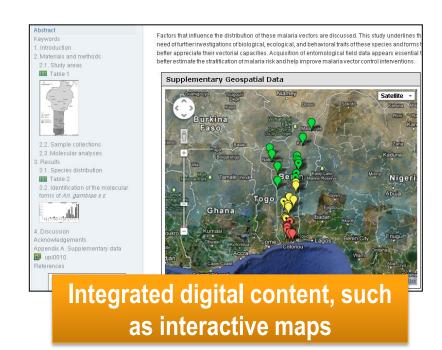


Express your research more fully

Nurture insights, give your readers more than clear text & professional images

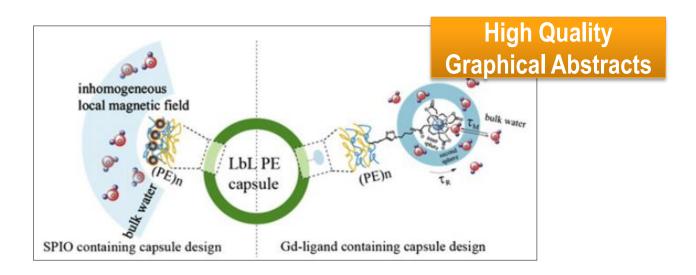






Innovative abstracting formats

Help readers to quickly see why the paper is of interest



Highlights

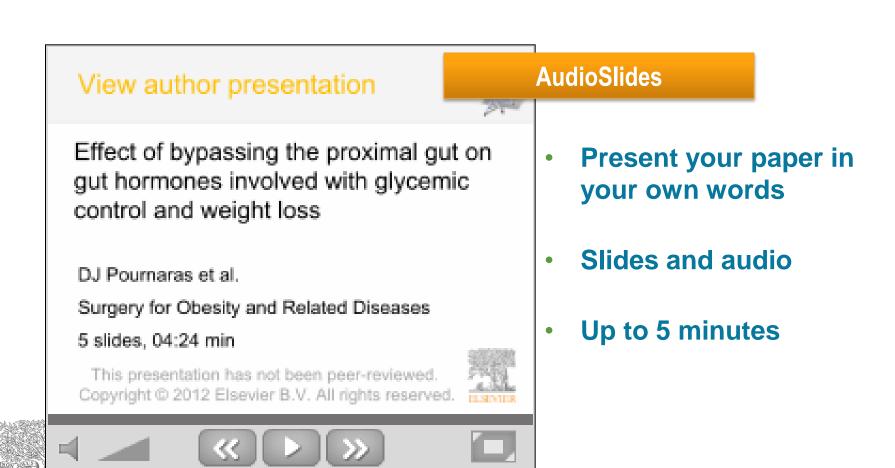
Highlights

- A conformational two-state mechanism for proton pumping complex I is proposed.
- The mechanism relies on stabilization changes of anionic ubiquinone intermediates.
- Electron-transfer and protonation should be strictly controlled during turnover.
- The mechanism explains the full reversibility of complex I.



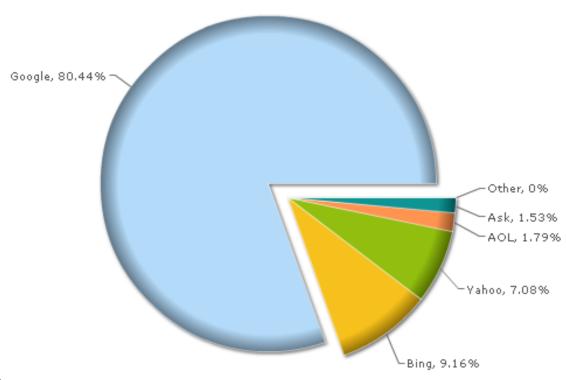
AudioSlides

Explain your research in your own words – webcast style



80% of traffic from search engines is generated from Google...

Search Engines Market Share

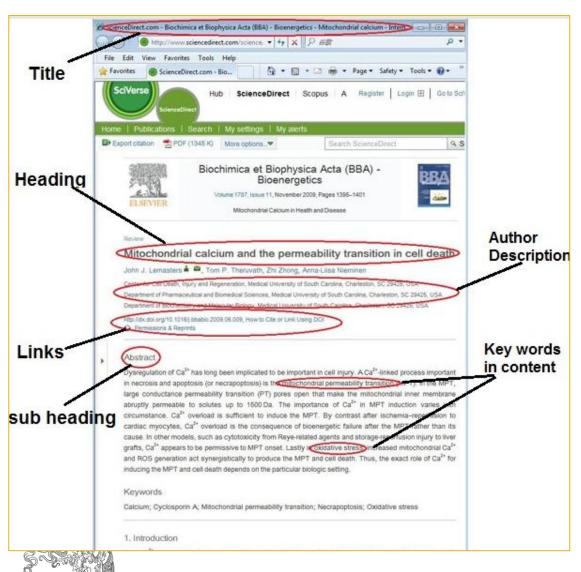


Want your article at the TOP of the list?





Give your article a strong presence



Use strong key words in:

- Title
- Heading / sub-headings
- Description tags
- Description of authors
- Main body text
- Abstract
- Graphics (tables & figures)

Share your knowledge

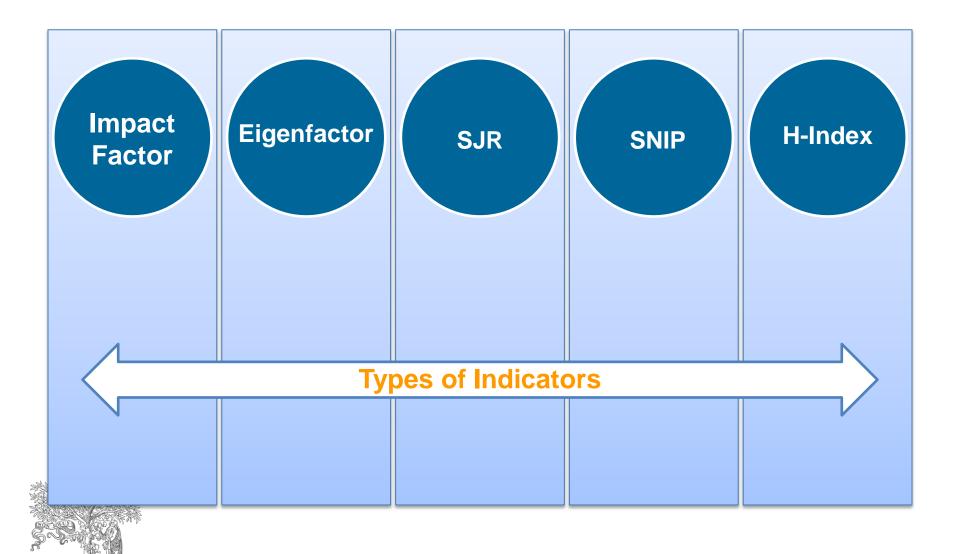
Make your paper stand out from the crowd...





What you can do to get your research noticed

Bibliometrics



Impact factor

Impact Factor

Year 2

Year 1

Citing Year



ISI Web of Knowledge™

Journal Citation Reports®

2009 JCR Science Edition

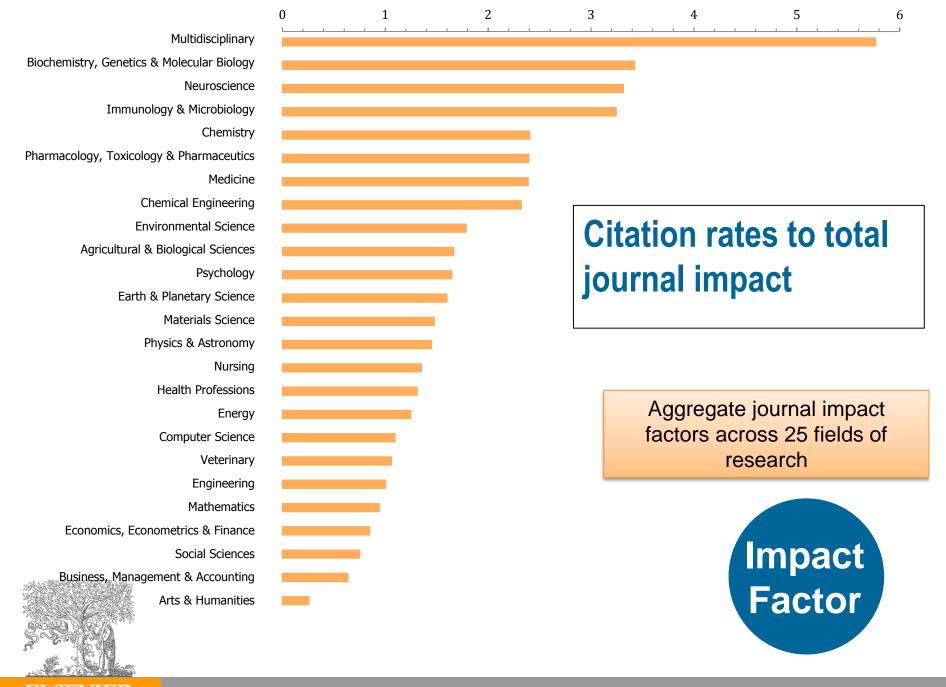
Journal Impact Factor 1

To all items (regardless of type)

Only source items ('articles' and 'reviews')



Citations to non-source items (editorials, letters, news items, book reviews, abstracts) may inflate the Impact Factor



Eigenfactor



Year 5

Year 4

Year 3

Year 2

Year 1

Citing Year



Freely available at eigenfactor.org; on the JCR

Similar to Impact Factor, but considers 5 years

Self-citations excluded

Citations weighted by the EF of the citing journal





Similar calculating process to Google PageRank

Scimago Journal Rank

Year 3

Year 2

Year 1

Citing Year



Freely available at scimagojr.com; on Scopus

Similar to Impact Factor, but considers 3 years

Self-citations limited

Citations weighted by the SJR of the citing journal

SJR





It is based on Scopus data

Source Normalized Impact per Paper

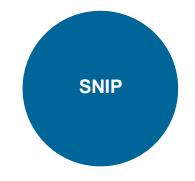
Year 3

Year 2

Year 1

Citing Year





Similar to Impact Factor, but considers 3 years

Measures contextual citation impact

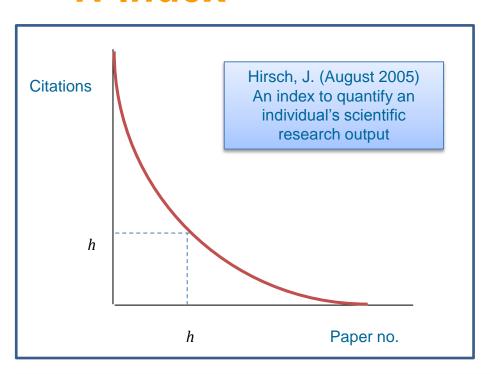
Citations weighted by the likelihood of citation in the subject field of source





Devised at the University of Leiden, currently the most sophisticated journal performance indicator

H-Index





Available online via Scopus

Rates individuals based on career publications

Incorporates both quantity and quality

Productivity and age constraints

H-Index

"... in my view, the h-index is inconsistent.

Ton van Raan

"For example, suppose that researcher A has three publications with five citations each (h=3)

Bibliometrics: Measure for measure

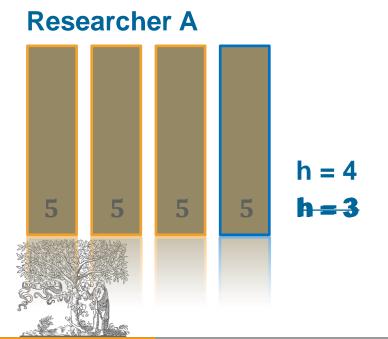
nature

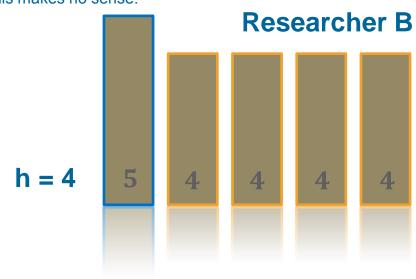
"and researcher B has four with four citations each (h=4).

"Both obtain one additional publication with five citations.

"Researcher A's h-index then increases to four, whereas researcher B's h-index remains equal to four.

"This makes no sense."





Determine if you are ready to publish

You should consider publishing if you have information that advances understanding in a certain scientific field

This could be in the form of:

- Presenting new, original results or methods
- Rationalizing, refining, or reinterpreting published results
- Reviewing or summarizing a particular subject or field

If you are ready to publish, a strong manuscript is what is needed next



What is a strong manuscript?

- Has a <u>novel</u>, <u>clear</u>, <u>useful</u>, and <u>exciting</u> message
- Presented and constructed in a <u>logical</u> manner
- Reviewers and editors can grasp the scientific significance easily

Editors and reviewers are all busy researchers – make things easy to save everyone's time



Type of manuscript









The importance of language



It can delay or block publication of work

Proper English should be used





Do publishers correct language?

No! It is the Author's responsibility...



...but r**esources** are available



General structure of a research article

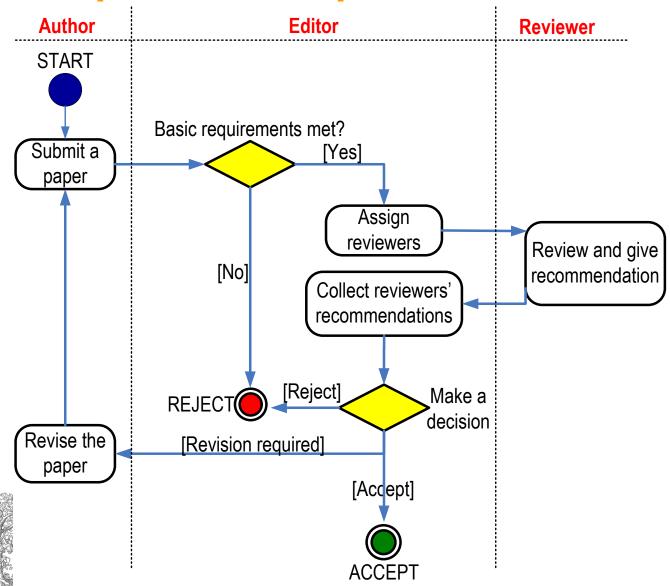




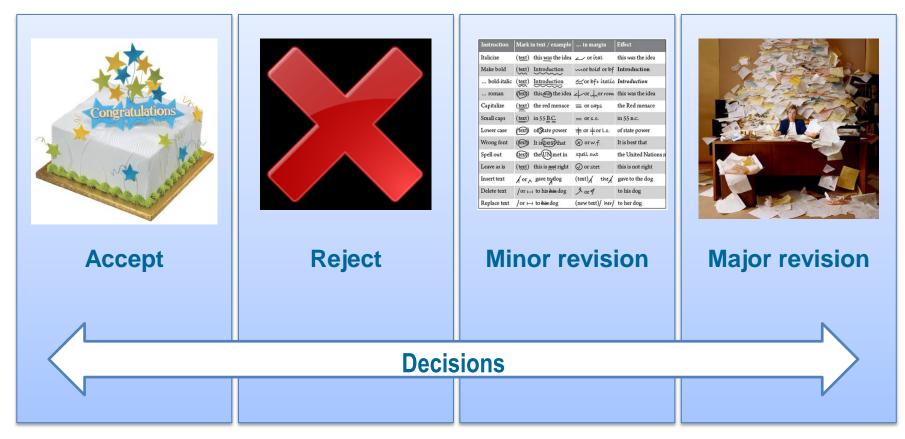




The peer review process: an overview



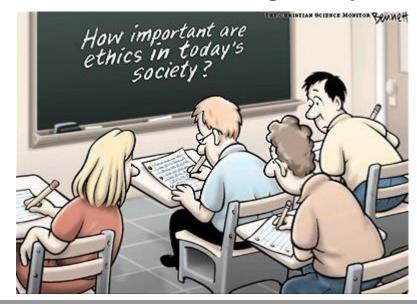
Types of editorial decisions





Publish *AND* Perish! – if you break ethical rules

- International scientific ethics have evolved over centuries and are commonly held throughout the world.
- Scientific ethics are not considered to have national variants or characteristics – there is a single ethical standard for science.
- Ethics problems with scientific articles are on the rise globally.





The most serious issues



Fabrication

Making up research data



Falsification

Manipulation of existing research data



Plagiarism

Previous work taken and passed off as one's own

These are the 3 most common forms of ethical misconduct that the research community is challenged with



Types of plagiarism



Work that can be plagiarised includes...

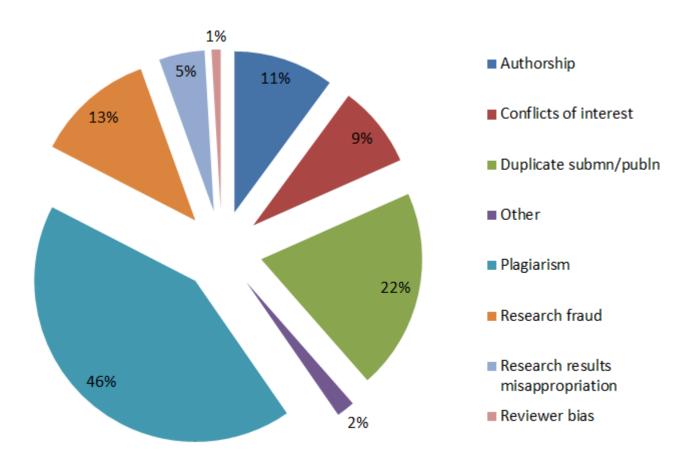
Words (Language)
Ideas
Findings
Writings
Graphic Representations
Computer Programs
Diagrams

Graphs
Illustrations
Information
Lectures
Printed Material
Electronic Material
Any Other Original Work

Higher Education Academy, UK



Plagiarism: high amongst ethics issues





Paraphrasing



Paraphrasing is restating someone else's ideas while not copying their actual words verbatim

Unacceptable:

Using exact phrases from the original source without enclosing them in quotation marks

Emulating sentence structure even when using different words

Emulating paragraph organization even when using different wording or sentence structure



Statement on Plagiarism
 Department of Biology, Davidson College.
 http://www.bio.davidson.edu/dept/plagiarism.html

Can you plagiarize your own work? "Text re-cycling/Self-plagiarism"



A grey area, but best to err on the side of caution: always cite/quote even your own previous work

You publish a paper and in a later paper, copy your Introduction word-for word and perhaps a figure or two without citing the first paper

Editors may conclude that you intentionally exaggerated your output



Correct citation is key

Crediting the work of others (including your advisor's or your own previous work) by citation is important for at least three reasons:



To place your own work in context



To acknowledge the findings of others on which you have built your research



To maintain the credibility and accuracy of the scientific literature



Conflicts of interest (Q)



Indicate if any of the following are examples of conflicts of interest:

- 1. A University Researcher, who owns stock in a large oil company, conducts an experiment on the environmental effects of oil drilling.
- 2. A University Researcher, who is developing and testing a new technology, is also a consultant for a financial services firm that weighs investments in new technologies.
- **3.** A Researcher submits an article to a journal for which the Editor-in-Chief is a Professor in the Researcher's department.
 - **4.** A Doctor who abides by traditional healing procedures writes a paper on emerging current medical technologies.



Conflicts of interest (A)

These are all present potential conflicts

They can take many forms:

- Direct Financial employment, stock ownership, grants, patents
- Indirect Financial honoraria, consultancies, mutual fund ownership, expert testimony
- Career & Intellectual promotion, direct rival
- Institutional
- Personal Belief

The proper way to handle potential conflicts of interest is through transparency and disclosure. At the journal level, this means disclosure of the potential conflict in your cover letter to the Journal Editor



Authorship: order and abuses

General principles for who is listed first:

First Author:

- conducts and/or supervises the data analysis and the proper presentation and interpretation of the results
- · puts paper together and submits the paper to journal

Co-Author(s):

- makes intellectual contributions to the data analysis and contributes to data interpretation
- reviews each paper draft
- must be able to present the results, defend the implications and discuss study limitations

Abuses to be avoided:

Ghost Authors:

leaving out authors who should be included

Scientific Writers and Gift Authors:

including authors when they did not contribute significantly



All Stakeholders



Authors



Institutions
Companies
Agencies
Funding Bodies



Publishers/
Journal Editors

Who is really responsible for Ethics?

All Elsevier journals are members of:



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Applied Mathematical Modelling

Volume 34, Issue 3, March 2010, Pages 842

Refraction notice

Retraction notice to "Numerical treatment of nonlinear mixed differential equations" [Appl. Math. Model. 29 (2005) 439–46

Gamal A.F. Ismail

University College for Women, Ain Shams University, 82 A Abdel Aziz Fahmy St., Heliopolis, Cairo, Egypt

http://dx.doi.org/10.1016/j.apm.2009.10.020, How to Cite or Link Using DOI

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This article has been retracted at the request of the Editor-in-Chief. Please see Elsevier Policy Withdrawar (http://www.elsevier.com/locate/withdrawarpolicy).

Reason: The author has plagiarized part of a paper that had already appeared in *J. Math. Biol.*, 583–601, doi:10.1007/BF00275686. One of the conditions of submission of a paper for publica authors declare explicitly that their work is original and has not appeared in a publication elsevuse of any data should be appropriately cited. As such this article represents a severe ab scientific publishing system. The scientific community takes a very strong view on this matt applopize to readers of the journal that this was not detected during the supmission process.

the echoes issuing from the flaws to be detected. Therefore, it cannot be cancelled by classical time averaging or matched band-pass filtering techniques.

Many signal processing techniques have been utilized for sigmal-to-noise ratio (SNR) improvement in ultrasonic NDT of highly scattering materials. The most popular one is the split spectrum processing (SSP) [1-3], because it makes possible real-time ultrasonic test for industrial applications, providing quite good results. Alternatively to SSP, wavelet transform (WT) based denoising/detection methods have been proposed during recent years [4-8], yielding usually to higher improvements of SNR at the expense of an increase in complexity. Adaptive time-frequency analysis by basis pursuit (BP) [9,10] is a secent technique for decomposing a signal into an optimal superposition of elements in an overcomplete waveform dictionary. This technique and some other related techniques have been successfully applied to denoising ultrasonic signals ou taminated with grain noise in highly scattering materials [11,12], as an alternative to the W technique, the computational cost of algorithm being the main drawback

In this paper, we propose a cold morning pursuit-based signal procession mented for improving SNR in ultrascot. NDT of highly scattering materials, such a set and contestes. Matching pursuit is used instead of BP to reduce the complexity. Desire its iterate a nature, the method is fast enough to be real-time implemented. The performance of the proposed method has been evaluated us a sorth or purer simulation and experience all rolls, i.e. when the input SNR a NRin) is lower can 0dB (the level of eches notify a performance of the check of the center).

2. Matching pursuit

Matching pursuit was introduced by Mallat and Zhang [13]. Let us suppose an approximation of the ultrasonic backscattered signals x[n] as a linear expansion in terms of functions $g_x[n]$ chosen from an over-complete dictionary. Let H be a Hilbert space. We define the over-complete dictionary as a family $D = \{g; i = 0, 1, ..., L\}$ of vectors in H, such as $\|g_i\| = 1$.

The problem of choosing functions $g_i[n]$ that best approximate the analysed signal x[n] is computationally very complex. Matching persuit is an iterative algorithm that offers sub-optimal solutions for decomposing signals in terms of expansion functions chosen from a disponary, where I^i norm is used as the approximation metric because of its mathematical confusience. When a well-designed diction by is used in containing pursuit, the non-linear values of the algorithm leads to compact of the law and model.

In each set of the interpretation, vector $g_i[n]$ which $g_i[n]$ the largest ther product with the analysed signal is become. The contribution of this vector then subtracted from the signal and the process is repeated on the residual. At the with iteration the bidue is

$$r^{m}[n]$$

$$\begin{bmatrix} x[n] & m = 0, \\ r^{m+1}[n] + \alpha_{0m(0)(m)}[n], & m \neq 0, \end{bmatrix}$$
(1)

where $\alpha_{d(m)}$ is the weight associated to optimum atom $g_{(m)}[n]$ at the with iteration.

The weight d_i^n associated to each atom $g_i[n] \in D$ at the with iteration is introduced to compute all the inner products with the residual $r^n[n]$:

$$a_i^m = \frac{(r^m[n], g_i[n])}{(g_i[n], g_i[n])} = \frac{(r^m[n], g_i[n])}{\|g_i[n]\|^2}$$

 $= v^m[n], g[n]).$ (2)

The optimum atom $g_{(ije)}[n]$ (and its weight $\alpha_{(ije)}$) at the with iteration are obtained as follows:

$$g_{ijm}[n] = \arg \min_{\vec{q} \in D} ||e^{im+1}[n]||^2$$

 $= \arg \max_{\vec{q} \in D} ||a_i^m||^2 = \arg \max_{\vec{q} \in D} ||a_i^m||.$ (3)

The computation of correlations $(r^{\mu}[n], g_{\mu}[n])$ for all vectors g[n] at each iteration implies a high computational effort, which can be substantially reduced using an updating procedure derived from Eq. (1). The correlation updating procedure [13] is performed as follows:

$$(r^{\mu\nu})[n], g[n]) = (r^{\mu}[n], g_i[n])$$

= $\alpha_{i(\mu)}(g_{\mu\nu}[n], g_i[n]).$ (4)

The article of whose authors committed plagiarism: it won't be removed from ScienceDirect. Everybody who downloads it will see the reason of retraction...

Consequences, or how it can end Academic Scandal Shakes Japan BBC

Young scientist accused of fraud

Collins said the fraud re

quired the retraction of thre

studies on leukemia and par

tial retraction of two others

He said the research repre

sented a federal investmen

No patients were involve

in the fabricated research

and Collins said the basic ut

derstanding about leukemi

The student, who was no

identified by Collins, the NI

or the University of Mich

gan, is now being investigate

by a federal agency and th

search papers that Collin

withdrew indicates the r

An examination of the r

of \$50,000 to \$60,000.

is not affected.

By Paul Recer Associated Press

WASHINGTON - He was the best and the brightest, the star of a cadre of overachievers at the National Institutes of Health. But now his accusers say the success was a fragile facade of fraud that has all come tumbling down.

A University of Michigan doctoral candidate, the young researcher was handpicked by Dr. Francis Collins to come to the NIH and work in one of the nation's most prestigious genetic laboratories.

But Collins, head of the National Center for Human Genome Research at the NIH.

Taiwanese Minister

Posted 16 Jul 2014 | 18:05 GMT

By Yu-Tzu Chiu

By DAVID MCNEILL | THE CHRONICLE OF HIGHER EDUCATION JULY 6, 2014



Haruko Obokata in April. After ha Riken of fabricat F Share | M Email | F

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Peer Review Scandal Takes Do

NSF Audit of Successful Proposals Finds **Numerous Cases of Alleged Plagiarism**

2013-03-08 14:35 | 34 Comments

The National Science Foundation (NSF) is investigating nearly 100 cases of suspected plagiarism drawn from a single year's worth of proposals funded by the agency.

The cases grow out of an internal examination by NSF's Office of Inspector General (IG) of every proposal that NSF funded in fiscal year 2011. James Kroll, head of administrative investigations within the IG's office, tells ScienceInsider that applying plagiarism software to NSF's entire portfolio of some 8000 awards made that year resulted in a "hit rate" of 1% to 1.5%. "My group is now swamped," he says about his staff of six investigators.

Plagiarism is one of three categories, along with fabrication and falsification, recognized as research misconduct by federal research agencies. (NSF labels the latter two categories "problematic data.") Last week, NSF IG Allison Lerner told a congressional panel that the number of "substantive allegations of misconduct associated with NSF proposals and awards ... has more than tripled in the past 10 years, as has the number of findings of research misconduct." She said her office has issued 120 findings of research misconduct since 2003 and that "more than 80%" involved plagiarism.

By law, 73 federal agencies have an Inspector General -- an independent, internal watchdog

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24 February 2011 Last updated at 11:38 GMT

German minister loses doctorate after plagiarism row

Germany's defence minister has been stripped of his university doctorate after he was found to have copied large parts of his work from others.

Karl-Theodor zu Guttenberg, an aristocrat who lives in a Bavarian castle, admitted breaching standards but denied deliberately cheating



elated Stories

ermany's Baron vithout a title

lagiarism row ninister drops PhD

ENVER POST HOME EDITION

Saucer Scientist' \$50,000 Fraud

s Listed



Swindle Alleged In Oil Tests

Illustration: Randi Klett

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Ending War

What leads to acceptance?

- Attention to details
- Check and double check your work
- Consider the reviewers' comments
- English must be as good as possible
- Presentation is important
- Take your time with revision
- Acknowledge those who have helped you
- New, original and previously unpublished
- Critically evaluate your own manuscript
- Ethical rules must be obeyed



Nigel John Cook
 Editor-in-Chief, Ore Geology Reviews

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- http://www.physics.ohio-state.edu/~wilkins/writing/index.html
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