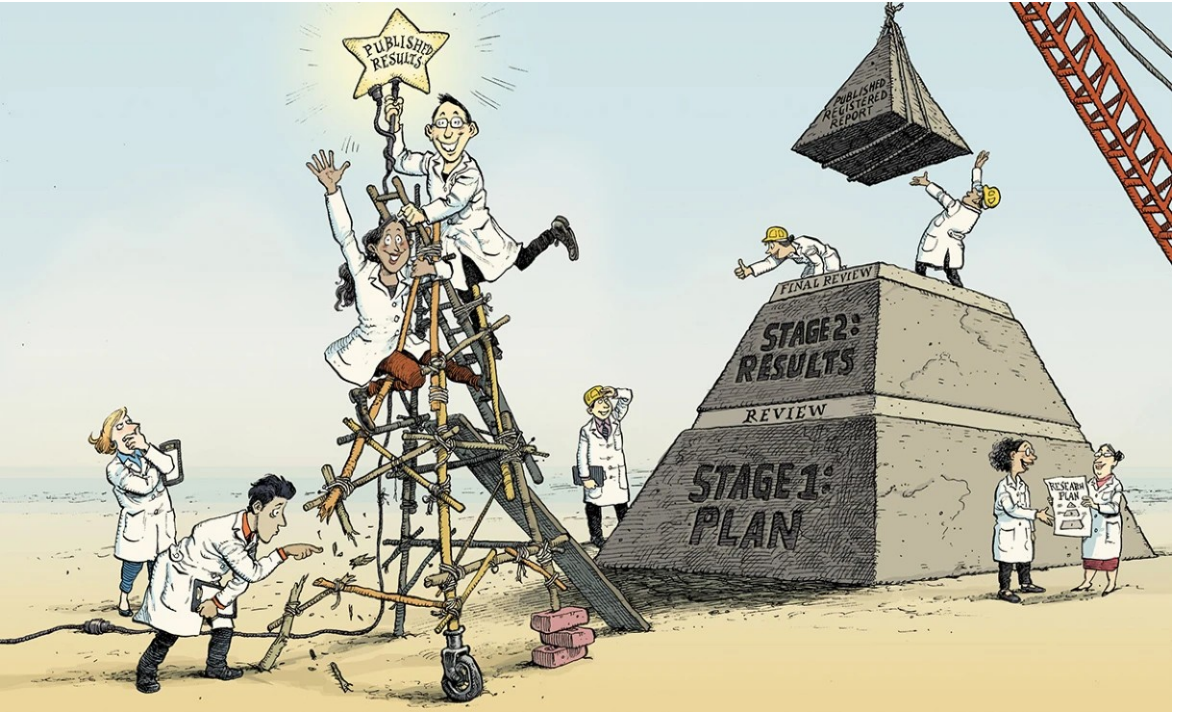
UTT9101 Initiation to Scientific Writing

PUBLISHING



Chris Chambers, *Nature* 573, 187-189 (2019)

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https://sysbio.ioc.ee

Publishing options

- Peer reviewed paper
- Conference proceedings
- Book
- Book chapter
- Data and code publishing
- Preprints

Priorities: where to publish

- Paper *vs* conference proceedings
- Priorities depend on the field. Talk to your supervisor

Preprint services

- A preprint, also known as the Author's Original Manuscript (AOM), is the version of your article before you have submitted it to a journal for peer review.
- Preprint servers are online repositories which enable you to post this early version of your paper online.
  - ArXiv (physical sciences)
  - SocArXiv (social sciences)
  - bioRxiv (biology)

Preprint services: journals

- Check submission instructions. Usually, preprint services are not preventing publication.
- New practice: preprint required

eLife only reviews preprints

We ask authors to upload their paper as a preprint before peer review, preferably to bioRxiv or medRxiv. If you haven't already posted a preprint, we can post it on your behalf if we proceed with peer review.

If we encourage a full submission, we will provide constructive public comments that will be posted alongside the preprint, in addition to detailed feedback for the authors.

If we decide not to publish after peer review, authors retain significant control over when the public reviews are published and they can provide author responses. To learn more, please read our Author guide.

Publication classification by ETIS

Code	Name in Estonian	Type EST	Name in English
1.1.	Teadusartiklid, mis on kajastatud Web of Science andmebaasides Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Emerging Sources Citation Index ja/või andmebaasis Scopus (v.a. kogumikud)	1. Articles in journals	Scholarly articles indexed by Web of Science Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Emerging Sources Citation Index and/or indexed by Scopus (excluding chapters in books)
1.2.	Teadusartiklid teistes rahvusvahelistes teadusajakirjades, millel on registreeritud kood, rahvusvaheline toimetus, rahvusvahelise kolleegiumiga eelretsenseerimine, rahvusvaheline levik ning kättesaadavus ja avatus kaastöödele	1. Articles in journals	Peer-reviewed articles in other international research journals with an ISSN code and international editorial board, which are circulated internationally and open to international contributions
1.3.	Eelretsenseeritud teadusartiklid Eesti ja teiste riikide eelretsenseeritavates teadusajakirjades, millel on kohalik toimetuskolleegium, või eelretsenseeritud teadusartiklid Eesti kultuurile olulistes ajakirjades või teadusartiklid ajakirjades Akadeemia, Looming ja Vikerkaar.	1. Articles in journals	Scholarly articles in Estonian and other peer-reviewed research journals with a local editorial board; peer-reviewed scientific articles in journals important for Estonian culture or scholarly articles in Akadeemia, Looming, Vikerkaar
2.1.	Monograafiad	2. A book/monograph	Scholarly monographs
2.3.	Dissertatsioonide seerias ilmunud dissertatsioonid (v.a. käsikirjalised);	2. A book/monograph	Dissertations published in a series of dissertations (excluding manuscripts)

ETIS – Estonian Research Information System

https://www.etis.ee/Portal/Classifiers/Details/81e52bde-a1a1-490a-a9c4-2df9f3fc3a70?lang=ENG

Step back before publishing: Reproducibility

The **replication crisis** (also called the **replicability crisis** and the **reproducibility crisis**) is an ongoing methodological crisis in which it has been found that the **results of many scientific studies are difficult or impossible to reproduce**.

Wikipedia

Reproducibility in Cancer Biology: Challenges for assessing replicability in preclinical cancer biology

Timothy M Errington, Alexandria Denis, Nicole Perfito, Elizabeth Iorns, Brian A Nosek

eLife, Dec 7, 2021
https://doi.org/10.7554/eLife.67995

3Rs and reproducibility

Replacement

Avoiding or replacing animal use e.g. using cell cultures, computer modelling, or human tissue or volunteers.

Reduction

Where animal use is necessary, keeping numbers to the minimum e.g. using statistical methods to determine the smallest number of animals that can be used in an experiment.

Refinement

Where animal use is necessary, minimising pain and suffering and improving welfare e.g. using pain relief and providing housing that allows animals to perform their natural behaviours.

Data sharing

- Open scientific data or open research data is a type of open data focused on publishing observations and results of scientific activities available for anyone to analyze and reuse. A major purpose of the drive for open data is to allow the verification of scientific claims, by allowing others to look at the reproducibility of results, and to allow data from many sources to be integrated to give new knowledge. *Wikipedia*
- FAIR data: findability, accessibility, interoperability, and reusability
- Should be not a data dump, but described with metadata
- Personally, I suggest to use established bigger data repositories and not a repository provided by your current university

Sharing the code

- Be ready to share your code
- Consider making it open source if it is not
- As with the data, I would suggest to use well established code repositories
- Some journals may require submission of code copy outside of regular code repository

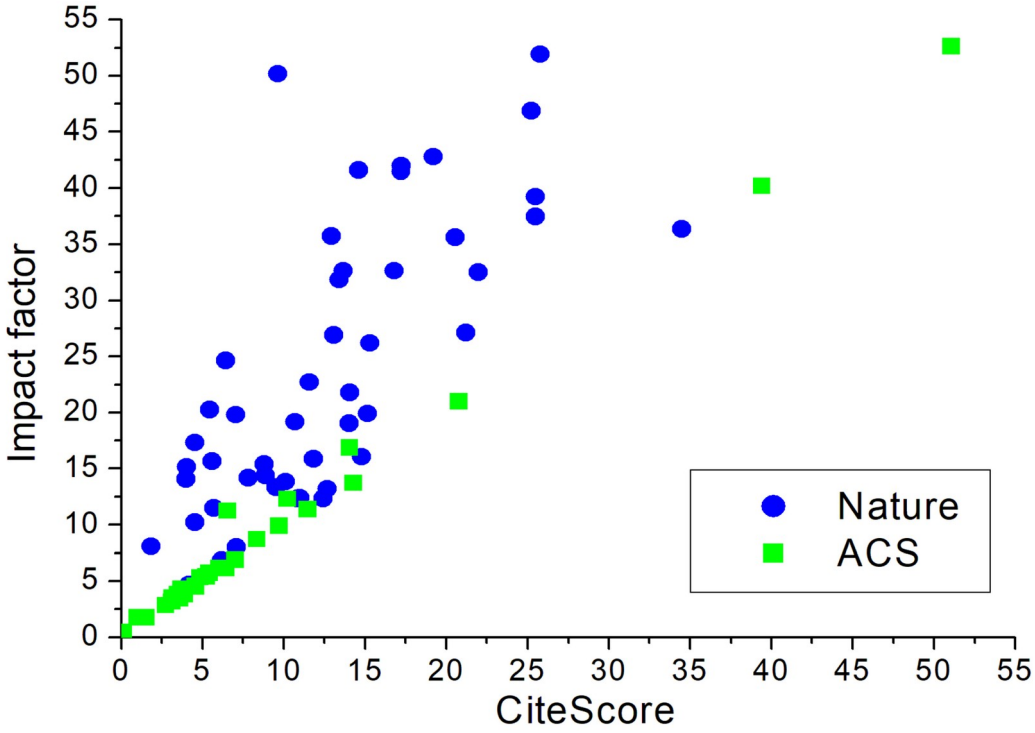
- Code and data sharing is usually a part of the publishing process

Paper publishing: steps

1. Compose and sort a list of journals
2. Select a journal from the top of the list
3. Read submission instructions for selected journal
4. Adjust the manuscript and cover letter
5. Submit
6. If rejected: drop journal from the list and GOTO 2
7. If revision requested: work on revision and GOTO 5
8. DONE

Journal list & ranking

- Not all journals are considered equal
- “Performance” of a journal is measured using different indexes. Some indexes:
  - *Impact Factor (Clarivate)*
  - *CiteScore (Elsevier / Scopus)*
  - *SCImago Journal Rank*



By Materialscientist - Own work, CC BY-SA 4.0
Wikipedia

Difference between IF and CS

- The Impact Factor is calculated as all incoming citations divided by the number of regular research articles: IF=(CF+CR)/NR.
- The CiteScore, by contrast, includes all articles, whether front matter or research articles, in the denominator: CS=(CF+CR)/(NF+NR).

- Impact Factor is often criticized because citations to front matter and other "non-citeable items" count toward the numerator but not the denominator of the score. As a result, journals that produce large amounts of front matter are probably receiving a bit of an extra boost from the Impact Factor score. The CiteScore measure eliminates this boost, at the expense of including all of the front-matter articles, however rarely cited, in the denominator

Scopus

Search Lists Sources SciVal Create account Sign in

Sources

Title Enter title Find sources

Title: BMC Biology ×

Improved Citescore

We have updated the CiteScore methodology to ensure a more robust, stable and comprehensive metric which provides an indication of research impact, earlier. The updated methodology will be applied to the calculation of CiteScore, as well as retroactively for all previous CiteScore years (ie. 2018, 2017, 2016…). The previous CiteScore values have been removed and are no longer available.

View CiteScore methodology. >

Filter refine list

Apply Clear filters

Display options

Display only Open Access journals

Counts for 4-year timeframe

No minimum selected

Minimum citations

Minimum documents

1 result

Download Scopus Source List Learn more about Scopus Source List

All Export to Excel Save to source list View metrics for year: 2021

	Source title	CiteScore	Highest percentile	Citations 2018-21	Documents 2018-21	% Cited
1	BMC Biology *Open Access*	8.4	94% 27/482 Plant Science	5,705	678	76

Top of page

BMC Biology

Open Access

Scopus coverage years: from 2003 to Present

Publisher: Springer Nature

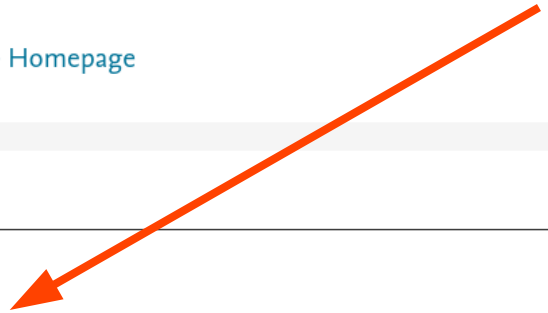
E-ISSN: 1741-7007

Subject area: Agricultural and Biological Sciences: Plant Science | Agricultural and Biological Sciences: Ecology, Evolution, Behavior and Systematics | Agricultural and Biological Sciences: General Agricultural and Biological Sciences | View all

Source type: Journal

View all documents > | Set document alert | Save to source list | Source Homepage

CiteScore | CiteScore rank & trend | Scopus content coverage



CiteScore rank 2021 | In category: Plant Science

Rank	Source title	CiteScore 2021	Percentile
#27 / 482	BMC Biology	8.4	94th percentile

BMC Biology

Open Access

Scopus coverage years: from 2003 to Present

Publisher: Springer Nature

E-ISSN: 1741-7007

Subject area: Agricultural and Biological Sciences: Plant Science | Agricultural and Biological Sciences: Ecology, Evolution, Behavior and Systematics | Agricultural and Biological Sciences: General Agricultural and Biological Sciences | View all

Source type: Journal

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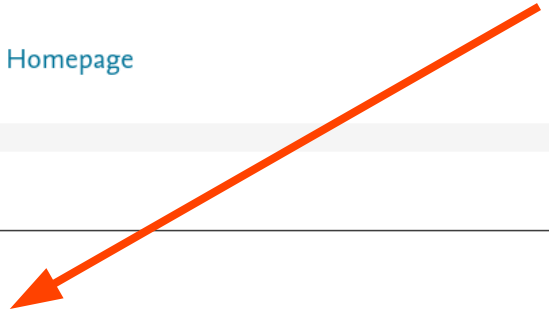
CiteScore | CiteScore rank & trend | Scopus content coverage



CiteScore rank 2021 In category: Physiology

Rank	Source title	CiteScore 2021	Percentile
#27 / 180	BMC Biology	8.4	85th percentile

Journal ranking

- Frequently, journals are split in ranking by quartiles:
  - Q1 top 25% of journals in the corresponding category
  - Q2 top 50%

Journal ranking and funding

- Q1 and Q2 journal papers considered in the formulas used for calculation of research funding in Estonia
- In TalTech, priority is given to Q1 only
- When applying for funding, it will be important *what* you have published and *where*. Depending on the funding agency, *what* and *where* contributions will vary.

Publication plan

- Journal selection based on
  - Scope
  - Ranking
  - References of your paper
- Take **time** to make a list of journals
- Aim as high as you can
- Watch out – each submission takes **time**

Time *may become an issue as you are expected to defend in 4 years.*

Submission: Cover letter

- Before cover letter, start with “Significance” statement:
  - Explain the significance of the research at a level understandable to an undergraduate-educated scientist outside their field of specialty
  - Include no more than 120 words

Significance statement: Example

Actin plays essential roles in cellular processes such as muscle contraction, cell motility, and cytokinesis. Humans express six noninterchangeable actin isoforms. Mutations in all the isoforms have been linked to devastating human diseases. Despite its significance, there is no reliable method to produce fully native recombinant actin, featuring native posttranslational modifications and free of contamination from endogenous actin of expressing cells. We report a method to obtain high yields of recombinant actin in human cells that addresses the shortcomings of previous methods. This method opens the way to studies that address how differences among actin isoforms dictate their specialized cellular functions and will help define the molecular bases of disease-causing mutations, which should accelerate the development of targeted therapies.

Ceron *et al*, *PNAS* 191: e2209150119, 2022

Cover letter

- Written as a letter
- Maximum 1 page
- Explain significance overall and in the field
- Make it easy to read
- Relate your findings to the scope of the journal
- Check instructions for authors, but usually you don’t need to include the statements (originality, not published nor submitted to other journal). Those statements are in the submission forms.

Manuscript adjustments

- In very high impact journals, you can usually submit in “format free” form. So, it is easy to submit and only minor adjustments are needed

Manuscript rejected

- If you were ambitious and submitted very high, it will be rejected
- Read rejection letter. It is frequently mostly automatic and look for one-two phrases that the editor or invited pre-reviewer added. See if it is a general drawback or you can address it.
- Resubmit to the next journal in the list

Revision requested

- Manuscript went to peer review
- 2-3 reviewers, each with their comments and points
- **DON'T PANIC** while reading it: Revisions tend to make manuscripts better. It is a part of the process
- When working on revision, you have to prepare
  - Revised manuscripts with changes marked
  - Rebuttal letter addressing each reviewer's comment **point-by-point**

Sometimes reviewers make mistakes

- It can happen that the manuscript is rejected due to the reviewer's misinterpretation, sloppy reading, inability to give time
- Same could happen with the editor
- Depending on the mistake, consider whether to
  - Resubmit *de novo* with the rebuttal (have to have gross mistake)
  - Protest to editor in chief (probably rarely works)
  - Move on to the next journal

Example resubmission *de novo*

Dear Editors, Dear Dr. [redacted]:

I would like to resubmit our manuscript as *de novo* in response to your decision on manuscript [redacted]. In our previous submission, there was a clear disagreement between the opinions of two reviewers with one of them praising the work (reviewer 1) and the other one (reviewer 2) finding that there are several methodological issues. At the same time, the both reviewers found the work intriguing and novel.

I find that the critique of the reviewer 2 stems from the fact that this reviewer did not look into the referred paper where we demonstrate linear relationship between NADH and respiration rate specifically in our preparation. Instead of looking into published experimental evidence, reviewer 2 stated "This apparently is a published method, but the logic just does not support such a correlation". Taking into account that the corresponding reference was clearly given in the manuscript, the referred paper is open-access and easily reachable, I find such statement rather odd and suggesting sloppy approach to the reviewing of our manuscript by reviewer 2. As you could see from our point-by-point replies, the issues 1 and 2 were immediately resolved by the referred paper. The issues regarding used temperature and FCCP were clearly addressed in our replies. I would like also to add that the issue 5 regarding the role of creatine kinase shuttle is not directly related to this

On acceptance: Open Access?

- Funding may require it
- Article processing charges:
  - 1000–3000 USD according to Wikipedia
- As a reference, compare it to the price of producing one paper (experiments, salaries, other costs)
- One of the advantages is increased number of citations (see Wikipedia for discussion)
- Alternative: preprint?

Conference proceedings

- Can be in many forms:
  - Abstract
  - 1 pager
  - Full blown paper
- Publishing an abstract will not preclude publishing full paper
- **Danger:** make sure that 1 pager with figures or full conference proceedings paper allow you to publish a paper, *if it is intended*

Predatory journals

- “The explosion in open-access publishing has fuelled the rise of questionable operators.”

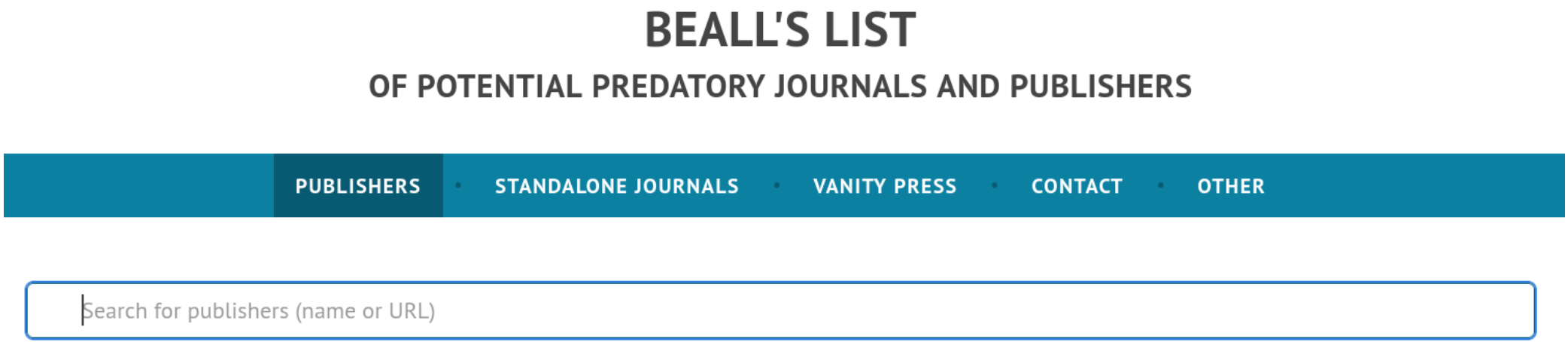
  Investigating journals: The dark side of publishing. Declan Butler. *Nature* 495, pages 433–435 (2013)

- Predatory publishers present themselves as academic journals but use lax or no peer review processes coupled with aggressive advertising in order to generate revenue from article processing charges from authors.

  Wikipedia, article on Open Access

Predatory journals

- Beall's List of Potential Predatory Journals and Publishers
  - https://beallslist.net/
- Approved list: https://doaj.org



Predatory journals: example email

Mail Alert to markov@sysbio.ioc.ee | ABSE

From	Archive of Biomedical Science and Engineering
Sender	submit.article@mailer.ptechzoa.org
To	markov@sysbio.ioc.ee
Reply-To	submit.article@ptechzoa.org
Date	2022-09-14 12:58

Summary Headers Plain text

To protect your privacy remote resources have been blocked. Allow

Dear Vendelin M,

We tried contacting you several times, but since you never responded, we'd like to do so once more as a courtesy.

For the new edition, we are missing one article. Can you help us out by contributing an article to this issue of the **Archive of Biomedical Science and Engineering (ISSN: 2641-3027)** by **September 28, 2022**, at the latest?

We request a contribution from you as we accept all sorts of articles including Research, Review; Case reports, etc., if this is short notice to you. We believe a 2-page piece won't take too much time for someone of your caliber.

The Impact Factor (I) of **Archive of Biomedical Science and Engineering** is **2.72**.

We are sure that you will always be there to help us.

The acknowledgment of this invitation is requested.

Regards,

Michael J

- Beall's list: yes
- Indexing: not in
  - Scopus
  - WebOfScience
  - PubMed
- No idea how the impact factor is calculated

Predatory journals: Finland and Norway databases

- https://kanalregister.hkdir.no
- https://jfp.csc.fi/jufoportal
- Be careful with
  - MDPI (very careful)
  - Frontiers (next “frontier”?)

Retraction Watch

Finland group downgrades 60 journals

A panel of scholars in Finland has downgraded 60 journals in their quality rating system, following months of review and feedback from researchers.

Publication Forum

The 60 journals will be downgraded from level 1 to level 0 at the start of 2025. Of these, 21 are from MDPI, three from Wiley, and three from Frontiers.

In 2023, JUFO downgraded MDPI’s *Sustainability* to level 0 over doubts about the journal’s “procedures to ensure scientific quality work reliably,” as we reported. At JUFO’s June meeting, the group discussed the possibility of downgrading all MDPI journals to level 0 but did not take any action on the idea. MDPI did not respond to our request for comment.

ChatGPT in scientific writing

“Using ChatGPT is a powerful tool to help scientists to write review articles more efficiently. Here are several reasons why you should use it to increase your proficiency in review writing, speed up your writing process, and save time.

It saves us time.

It can help us to manage your data.

It can help us to improve the quality of our scientific writing.

It can help us to keep a more balanced perspective.

Moreover, if you are not a native English speaker, ChatGPT can be tremendously helpful.

In addition to the above reasons, ChatGPT can help suggesting the article title, shortening, or expanding the abstract, discussing the results, and even recommending creative ideas.

ChatGPT can also help us to do the plagiarism detection.

Overall, the use of AI tools like ChatGPT can significantly help scientists to write review articles more efficiently and accurately, thus improving the quality and impact of their research outcomes.”

Jingshan Huang and Ming Tan, The role of ChatGPT in scientific communication: writing better scientific review articles, Am J Cancer Res. 2023; 13(4): 1148–1154

Am J Cancer Res is published by e-Century Publishing Corporation, which is on Beall’s list of predatory journals!

ChatGPT in scientific writing

Science

Artificial intelligence (AI). *AI-assisted technologies [such as large language models (LLMs), chatbots, and image creators] do not meet the Science journals' criteria for authorship and therefore may not be listed as authors or co-authors, nor may sources cited in Science journal content be authored or coauthored by AI tools. Authors who use AI-assisted technologies as components of their research study or as aids in the writing or presentation of the manuscript should note this in the cover letter and in the acknowledgments section of the manuscript. Detailed information should be provided in the methods section: The full prompt used in the production of the work, as well as the AI tool and its version, should be disclosed. Authors are accountable for the accuracy of the work and for ensuring that there is no plagiarism. They must also ensure that all sources are appropriately cited and should carefully review the work to guard against bias that may be introduced by AI. Editors may decline to move forward with manuscripts if AI is used inappropriately. Reviewers may not use AI technology in generating or writing their reviews because this could breach the confidentiality of the manuscript.*

AI-generated images and other multimedia are not permitted in the Science journals without explicit permission from the editors.

ELSEVIER

Publish with us

< Elsevier Policies

The use of generative AI and AI-assisted technologies in writing for Elsevier

This policy aims to provide greater transparency and guidance to authors, readers, reviewers, editors in relation to generative AI and AI-assisted technologies. Elsevier will monitor this development and will adjust or refine this policy when appropriate. Please note the policy only refers to the writing process, and not to the use of AI tools to analyze and draw insights from data as part of the research process.

Where authors use generative AI and AI-assisted technologies in the writing process, these technologies should only be used to improve readability and language of the work and not to replace key authoring tasks such as producing scientific, pedagogic, or medical insights, drawing scientific conclusions, or providing clinical recommendations. Applying the technology should be done with human oversight and control and all work should be reviewed and edited carefully, because AI can generate authoritative-sounding output that can be incorrect, incomplete, or biased. The authors are ultimately responsible and accountable for the contents of the work.

Publishing options

- Peer reviewed paper
- Conference proceedings
- Book
- Book chapter
- Data and code publishing
- Preprints
- **Not covered here: Science communication**

Homework

Imagine that you have a manuscript that you would like to publish (perhaps you even have a real manuscript).

Think through what your (possibly imaginary) results would be.

Select a higher impact journal from your field.

1. Write a significance statement (Explain the significance of the research at a level understandable to an undergraduate-educated scientist outside their specialty field. Include no more than 120 words).

2. Write a letter to editor describing your work. Do not forget to target the aims and scope of the journal in it.

3. For this exercise, do not use AI tools.

Submit before 13 November 2024, 23.59

Homework (2)

- **Before the authorship ethics lecture**, please take the TalTech online course "Ethical People in Ethical University", this includes topics we cover in this class but many more regarding academic ethics. You should take all 3 topics in thes course because you are going to need them anyway at some point of your academic career.
- https://moodle.taltech.ee/course/view.php?id=32794
- Please pass this course BEFORE the class. The certificates are not issued immediately but usually in the end of the term. We will check if you have passed the course if you do it under your name and ask for a certifcate.