



Retractions: Analyzing the Role of Misconduct and Plagiarism in Chemistry Manuscripts

Dr. Yulia Sevryugina

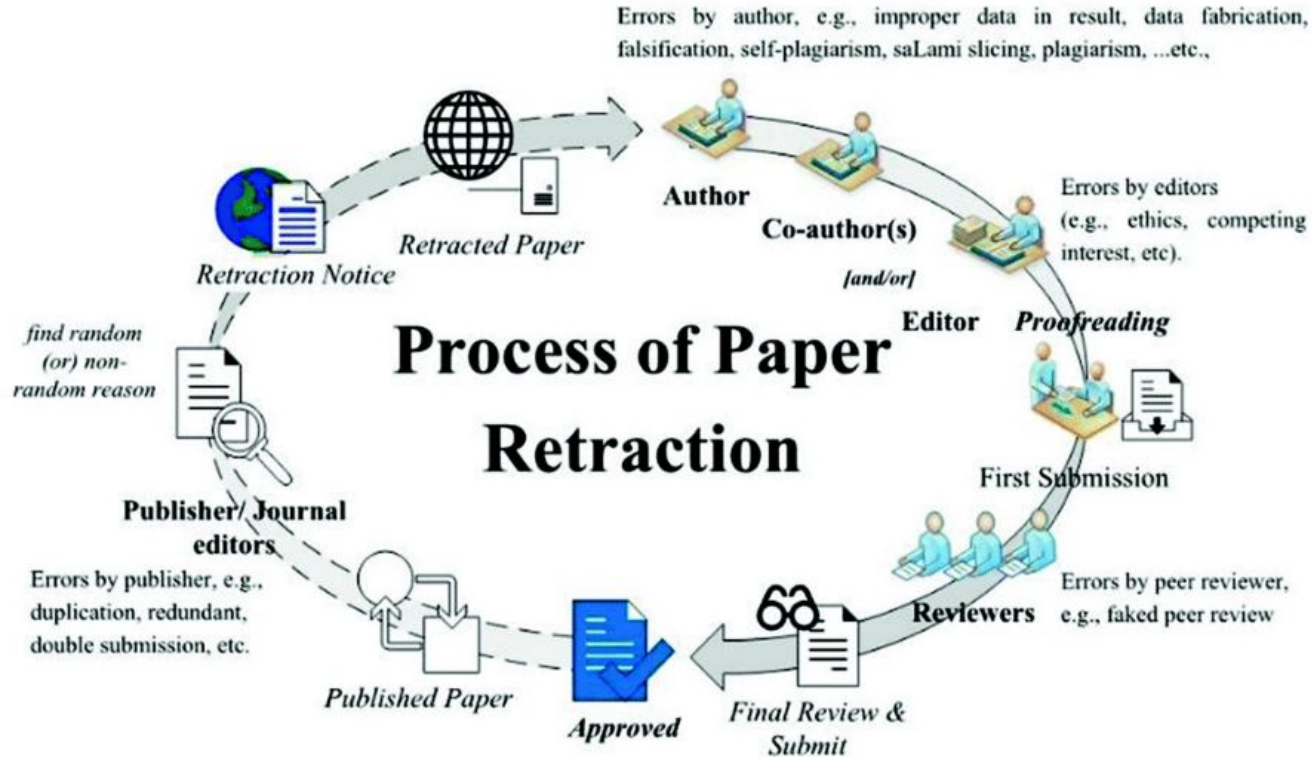
June 5, 2024



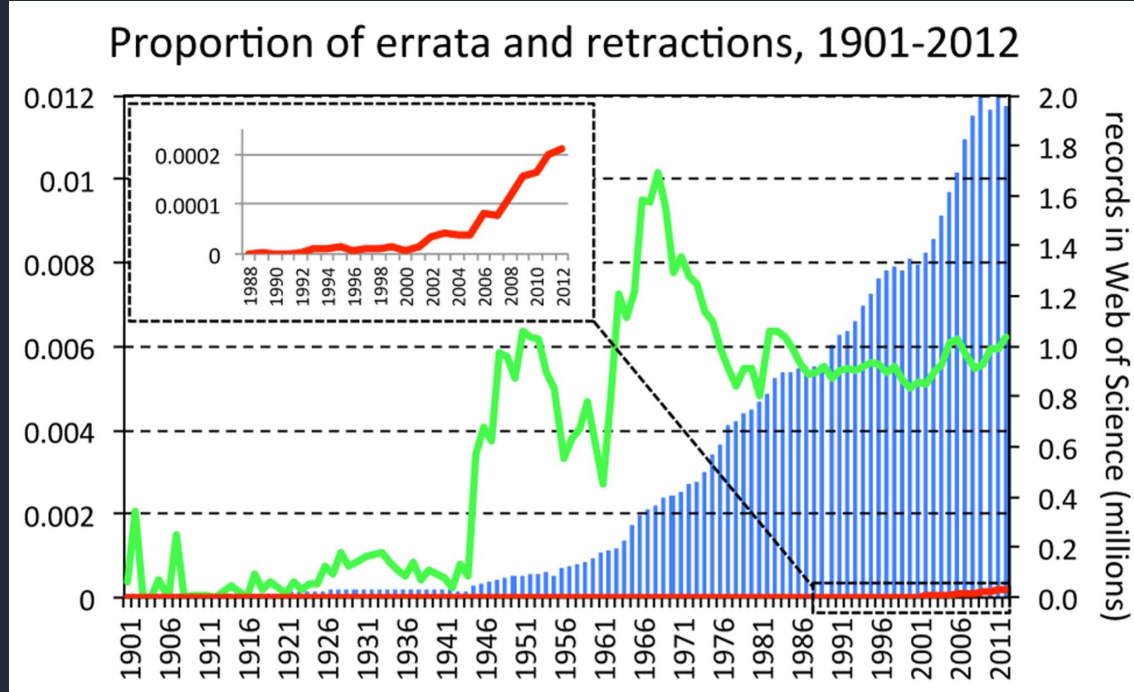
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From: Multiple Publications: The Main Reason for the Retraction of Papers in Computer Science



Recent Growth in Retractions



Bars represent total number of records added each year to the Web of Science database.

Green, proportion of Web of Science records marked as "correction" or "correction, addition," excluding those with "retraction" in the title.

Red, proportion of those that have "retraction" in the title.

Retraction Watch

Ivan Oransky &
Adam Marcus

Aug 2010

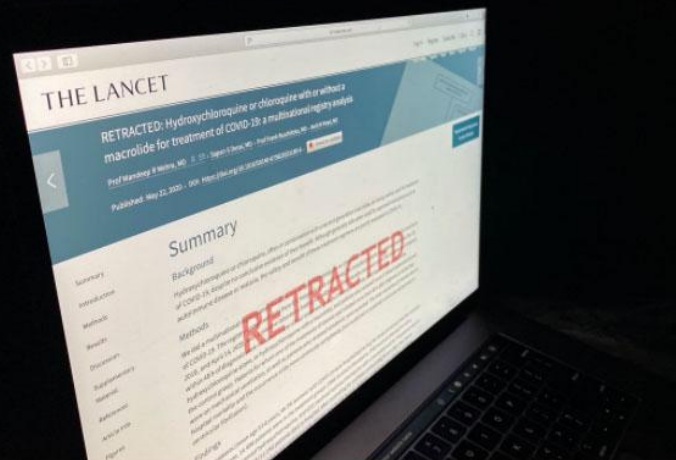
Science

Contents ▾

News ▾

Careers ▾

Journals



Many scientists citing two scandalous COVID papers ignore their retractions

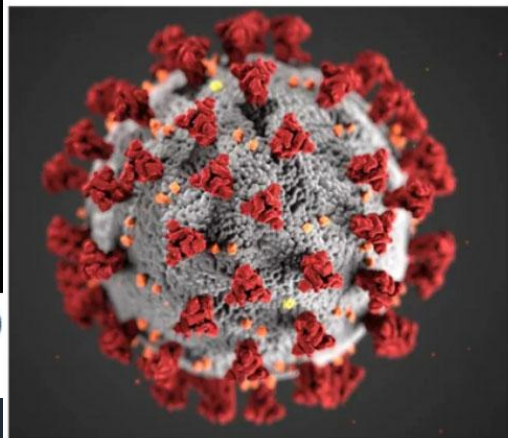
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More than 10,000 research papers were retracted in 2023 – a new record

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

[nature](#) > NEWS | 12 December 2023 By [Richard Van Noorden](#)

List of retracted COVID-19 papers grows past 70



As Retraction Watch readers may know, as part of keeping our database of retractions up to date, we've been publishing a running list of COVID-





Why Study Retractions?



Understanding the Scientific Process



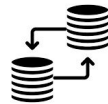
Learning from Mistakes



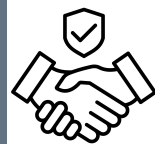
Developing Critical Thinking



Promoting Ethical Standards of Research

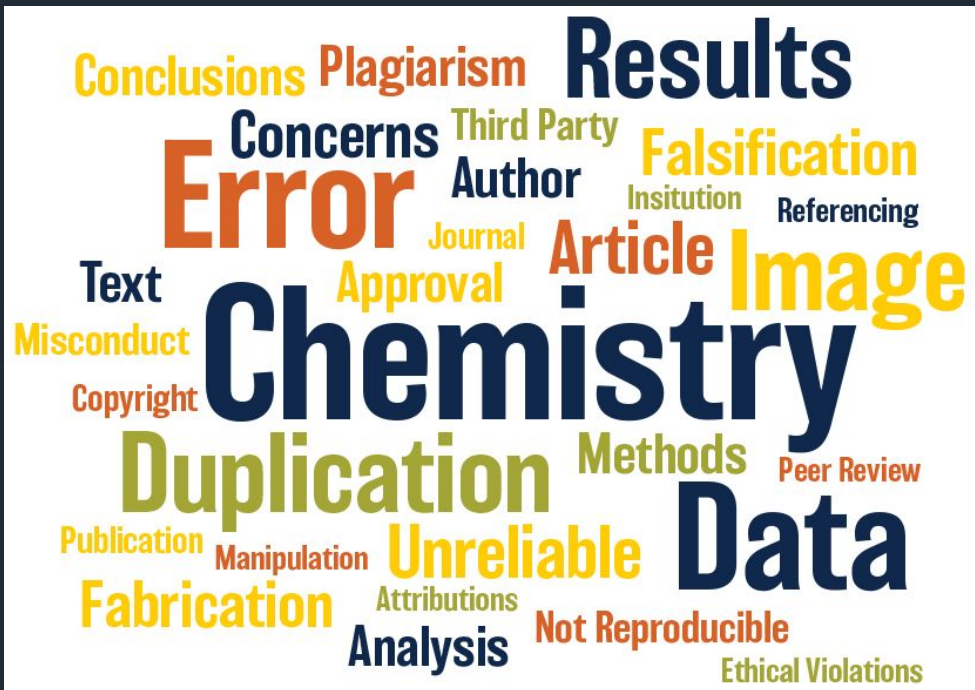


Addressing Replication Crisis



Building Trust in Scientific Literature

Retraction Practices in Chemistry



331 papers retracted in 2017 and 2018
Chemistry and Materials Science



Methods

- Data



- Scope

- Retracted Chemistry manuscripts
- 1,292 in total

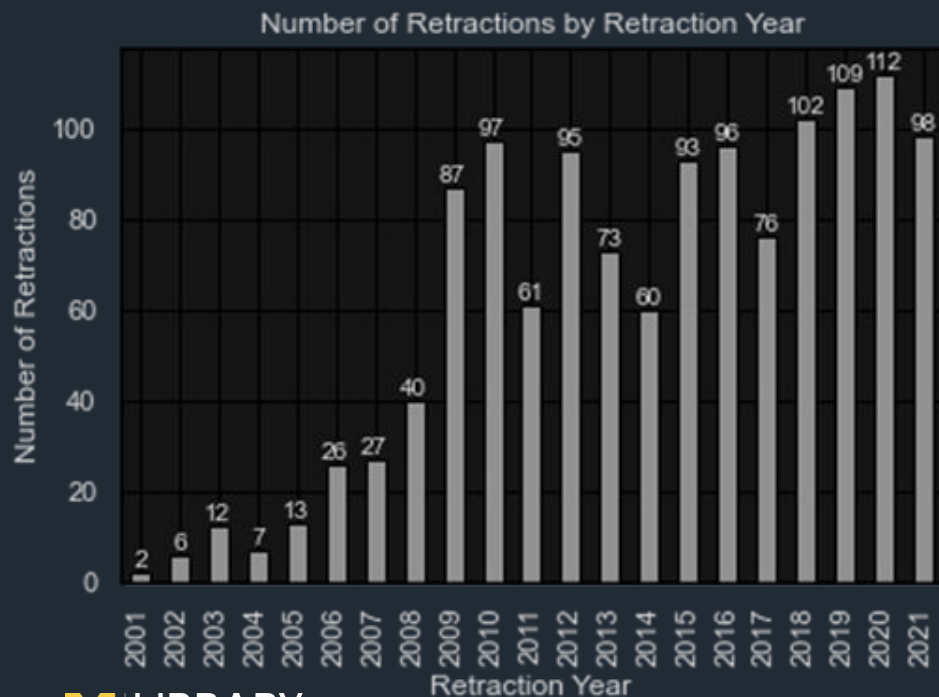
- Timeline: 2001-2021

- Article type:

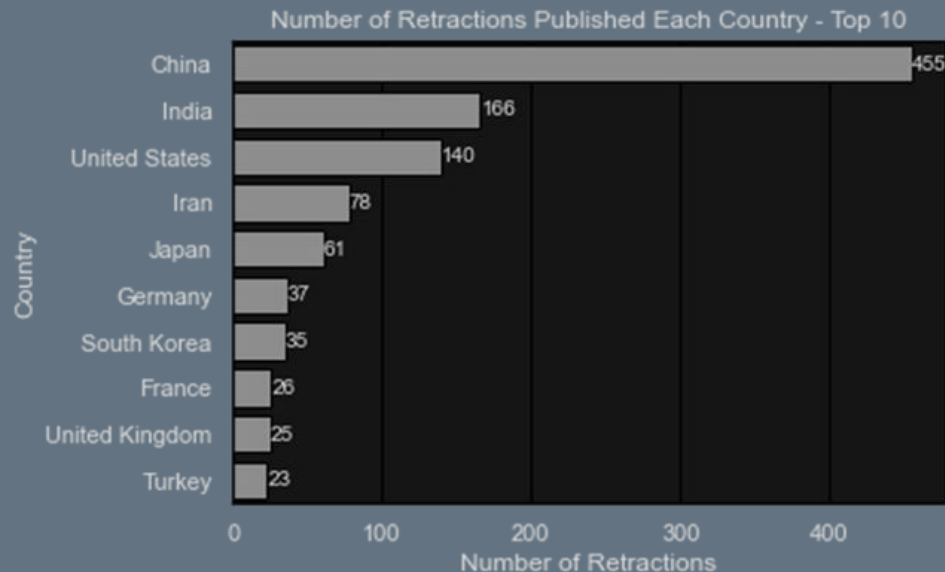
- Journal articles
- Review article (3%)

- Language: English

Retractions by Retraction Year

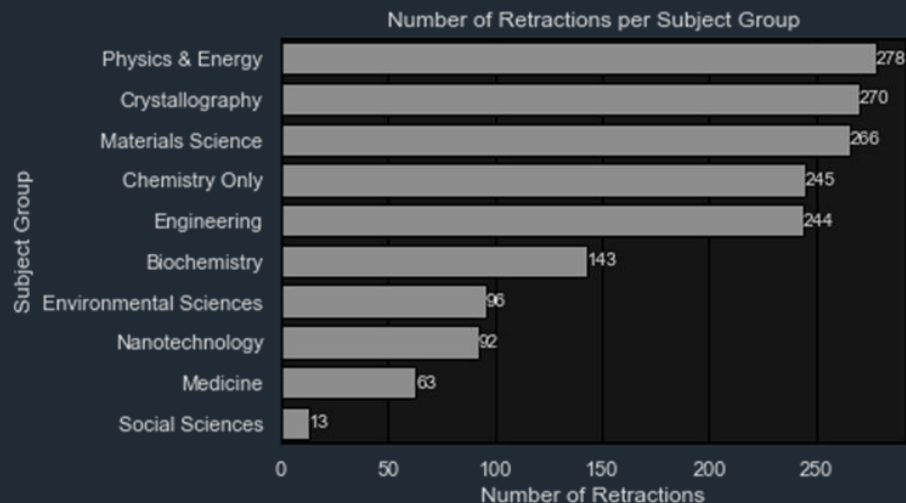


Retractions by Country of Corresponding Author



| Record ID | Title | Subject | Institution | Journal | Publisher | Country | Author | URLS |
|-----------|-------|--|-------------|------------|------------|-----------------------|----------------------|-------------------------------------|
| 0 | 34845 | Transparent (PHY) Chemistry;(PHY) Materials Science;(PHY) Nanotechnology | Advanced | ACS Appli | American | Germany;India | Bibekananda De;Bri | |
| 1 | 37305 | Luminescence (PHY) Chemistry;(PHY) Nanotechnology; | Departme | ACS Appli | American | United States | Vineet Kumar;Vinay | |
| 2 | 34906 | Non-thermal (PHY) Chemistry;(PHY) Materials Science; | Universit | Polymer C | Royal Soci | France;Spain | Thibault Castagnet; | |
| 3 | 37223 | New composite (PHY) Chemistry;(PHY) Materials Science; | Departme | Journal of | Elsevier | Israel | Yaeli S Oren;Viatche | |
| 4 | 34700 | The amine (PHY) Chemistry; | School of | Nature Ca | Springer - | China | Lei Xu;Fu | https://re |
| 5 | 34709 | Transition (PHY) Chemistry; | MOE Key L | Chemical | Royal Soci | China | Qingmin L | https://re |
| 6 | 36259 | Improved (PHY) Chemistry;(PHY) Physics; | MOE Key L | The Journ | American | China | Yajun Yang;Yanlong | |
| 7 | 34198 | A univers (PHY) Chemistry;(PHY) Materials Science;(PHY) Nanotechn | School of | Science A | American | Singapore;United Sta | Bu Yuan G | https://re |
| 7 | 34198 | A univers (PHY) Chemistry;(PHY) Materials Science;(PHY) Nanotechn | School of | Science A | American | Singapore;United Sta | Bu Yuan G | https://re |
| 8 | 35497 | Effect of M (PHY) Chemistry; | Sathyabar | ACS Omeg | American | India;Saudi Arabia;Ta | V L Mangesh;Tamizh | |
| 9 | 34244 | Optical pr (PHY) Chemistry;(PHY) Physics; | University | Physica E | Elsevier | Iraq | Hamad Rahman Jap | |
| 10 | 34285 | Tunable e (PHY) Chemistry;(PHY) Physics; | Departme | Physica E | Elsevier | Iraq | Ali Obies Muhsen A | |
| 11 | 34288 | Novel sup (PHY) Chemistry; | College of | Tetrahedr | Elsevier | China | Fafu Yang;Yingmei Z | |
| 12 | 37306 | Magnetic (PHY) Chemistry;(PHY) Physics; | Departme | ACS Nano | American | China;India;Japan | Zhun Kun Qi;Puneet | |
| 13 | 33357 | Inside the (PHY) Chemistry;(PHY) Physics; | Hubei Pro | ACS Macro | American | China;United States | Zixin Yu;Jie Wang;Zh | |
| 14 | 33358 | Integratio (PHY) Chemistry;(PHY) Nanotechnology;(PHY) Physics; | Departme | Journal of | Springer | India;Iran | Aziz Habibi-Yangjeh | |
| 14 | 33358 | Integratio (PHY) Chemistry;(PHY) Nanotechnology;(PHY) Physics; | Departme | Journal of | Springer | India;Iran | Aziz Habibi-Yangjeh | |
| 15 | 33342 | Monodisp (PHY) Chemistry;(PHY) Nanotechnology; | Sen Resea | RSC Advan | Royal Soci | Turkey | Betul Celik;Yunus Y | |
| 16 | 36589 | Synthesis (PHY) Chemistry; | School of | Materials | IOP Publis | India;United Kingdor | Harminder Singh Sa | |
| 17 | 33351 | Visible-lig (BLS) Microbiology;(PHY) Chemistry; | College of | Journal of | Wiley | China | Qiong Wu;Zhaohong | |
| 18 | 33166 | Viscoelast (PHY) Chemistry;(PHY) Materials Science;(PHY) Nanotechn | Departme | Macromol | Springer | Canada;Malaysia | Mustafa Abu Ghali | |

Subject



Chemistry

Engineering

Crystallography

Materials Science

Nanotechnology

Physics & Energy

Biochemistry

Environmental Sciences

Medicine

Social Sciences

Only (19%)

Reasons

Retraction Watch Database User Guide Appendix B: Reasons

| Reason | Description |
|---------------------------------|--|
| Author Unresponsive | Author(s) lack of communication after prior contact by Journal, Publisher or other original Authors |
| Bias Issues or Lack of Balance | Failure to maintain objectivity in the presentation or analysis of information |
| Breach of Policy by Author | A violation of the Journal, Publisher or Institutional accepted practices by the author |
| Breach of Policy by Third Party | A violation of the Journal, Publisher or Institutional accepted practices by a person or company/institution not the authors |
| Cites Retracted Work | A retracted item is used in citations or referencing |

<https://retractionwatch.com/retraction-watch-database-user-guide/retraction-watch-database-user-guide-appendix-b-reasons/>

| Reason |
|---|
| +Notice - Unable to Access via current resources;+Withdrawal; |
| +Duplication of Image;+Manipulation of Images; |
| +Concerns/Issues about Referencing/Attributions;+Fake Peer Review;+Rogue Editor;+Unreliable Results; |
| +Concerns/Issues About Data;+Concerns/Issues About Results;+Original Data not Provided; |
| +Concerns/Issues About Data;+Objections by Third Party;+Original Data not Provided;+Unreliable Data;+Unreliable Results; |
| +Duplication of Image;+Manipulation of Images; |
| +Duplication of Image;+Investigation by Third Party;+Paper Mill; |
| +Duplication of Image;+Investigation by Third Party;+Paper Mill; |
| +Duplication of Image;+Original Data not Provided; |
| +Concerns/Issues About Image;+Concerns/Issues About Results;+Duplication of Image; |
| +Error in Analyses;+Error in Data;+Unreliable Results; |
| +Lack of Approval from Company/Institution; |
| +Euphemisms for Plagiarism;+Plagiarism of Article; |
| +Concerns/Issues About Image;+Concerns/Issues about Referencing/Attributions;+Original Data not Provided;+Unreliable Results; |
| +Error in Analyses;+Error in Methods;+Error in Results and/or Conclusions;+Unreliable Results; |
| +Concerns/Issues About Image;+Duplication of Article;+Duplication of Image;+Unreliable Results;+Upgrade/Update of Article; |
| +Concerns/Issues About Authorship;+False/Forged Authorship; |
| +Duplication of Image;+Investigation by Company/Institution;+Manipulation of Images; |
| +Concerns/Issues About Data;+Concerns/Issues About Results;+Conflict of Interest;+Unreliable Results; |
| +Duplication of Image;+Unreliable Results; |
| +Plagiarism of Article; |
| +Author Unresponsive;+Duplication of Image;+Investigation by Third Party;+Paper Mill;+Unreliable Results; |
| +Concerns/Issues about Referencing/Attributions; |
| +Concerns/Issues about Third Party Involvement;+Duplication of Article;+Fake Peer Review; |
| +Concerns/Issues About Image;+Duplication of Image; |
| +Author Unresponsive;+Concerns/Issues About Data;+Investigation by Third Party;+Paper Mill;+Unreliable Results; |
| +Author Unresponsive;+Duplication of Article;+Original Data not Provided; |
| +Concerns/Issues About Data;+Duplication of Image;+Manipulation of Images;+Original Data not Provided;+Unreliable Results; |
| +Date of Retraction/Other Unknown;+Notice - Limited or No Information;+Temporary Removal;+Withdrawal; |
| +Date of Retraction/Other Unknown;+Notice - Limited or No Information;+Temporary Removal;+Withdrawal; |
| +Euphemisms for Plagiarism;+Plagiarism of Article; |
| +Duplication of Image;+Investigation by Company/Institution;+Manipulation of Images;+Original Data not Provided; |
| +Euphemisms for Plagiarism;+Plagiarism of Data;+Plagiarism of Image; |
| +Plagiarism of Text;+Upgrade/Update of Prior Notice; |
| +Duplication of Image;+Investigation by Company/Institution;+Manipulation of Images; |
| +Concerns/Issues About Image;+Duplication of Image;+Investigation by Third Party;+Paper Mill;+Unreliable Results; |

Errors and Concerns

Concerns/Issues About Data

Concerns/Issues About Image / Results

Results Not Reproducible

Unreliable Data / Results / Image

Original Data not Provided

Contamination of Cell Lines/Tissues

Contamination of Materials (General)

Contamination of Reagents

Error in Results and/or Conclusions

Error in Analyses/ Methods

Error in Image / Text / Data

Error in Materials (General)

Cites retracted work

Fraud

Euphemisms for Misconduct

Misconduct by Author

Misconduct by Company/Institution

Misconduct by Third Party

Falsification/Fabrication of Data

Falsification/Fabrication of Image

Falsification/Fabrication of Results

Manipulation of Images

Plagiarism

Duplication of Article

Duplication of Image

Duplication of Text

Euphemisms for Duplication

Duplication of Data

Taken from Dissertation/Thesis

Plagiarism of Article

Plagiarism of Text

Euphemisms for Plagiarism

Plagiarism of Data

Plagiarism of Image

Copyright Claims

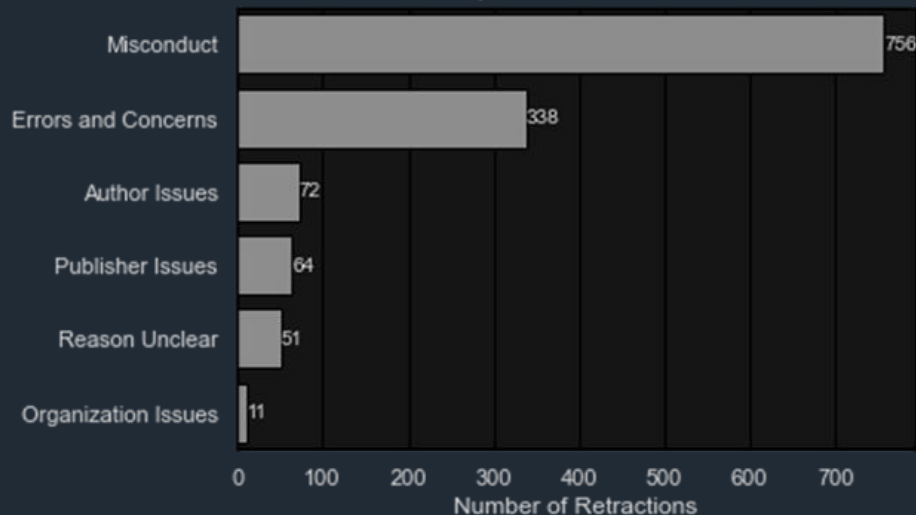
Concerns/Issues about Referencing/Attributions

Self-plagiarism

Doing the right thing!

Reasons

Number of Papers Retracted for Main Reason



Retraction reasons

Misconduct

Fraud

Plagiarism

Copyright claims

Plagiarism

Self-plagiarism

Errors and concerns

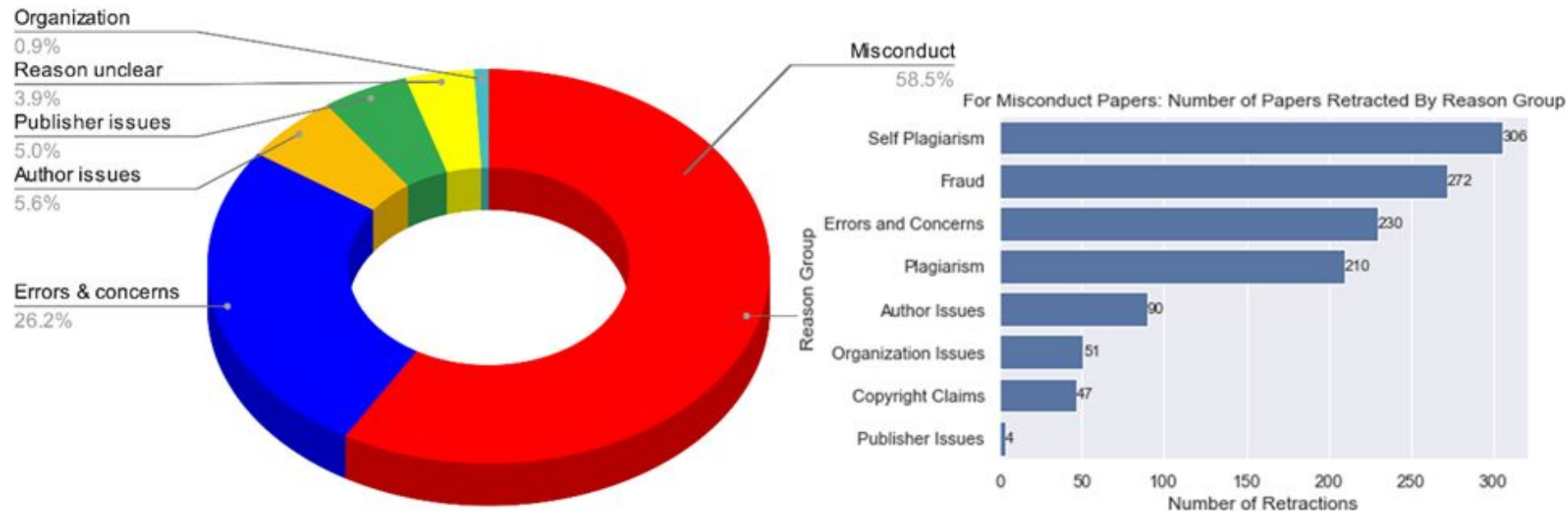
Author issues

Publisher issues

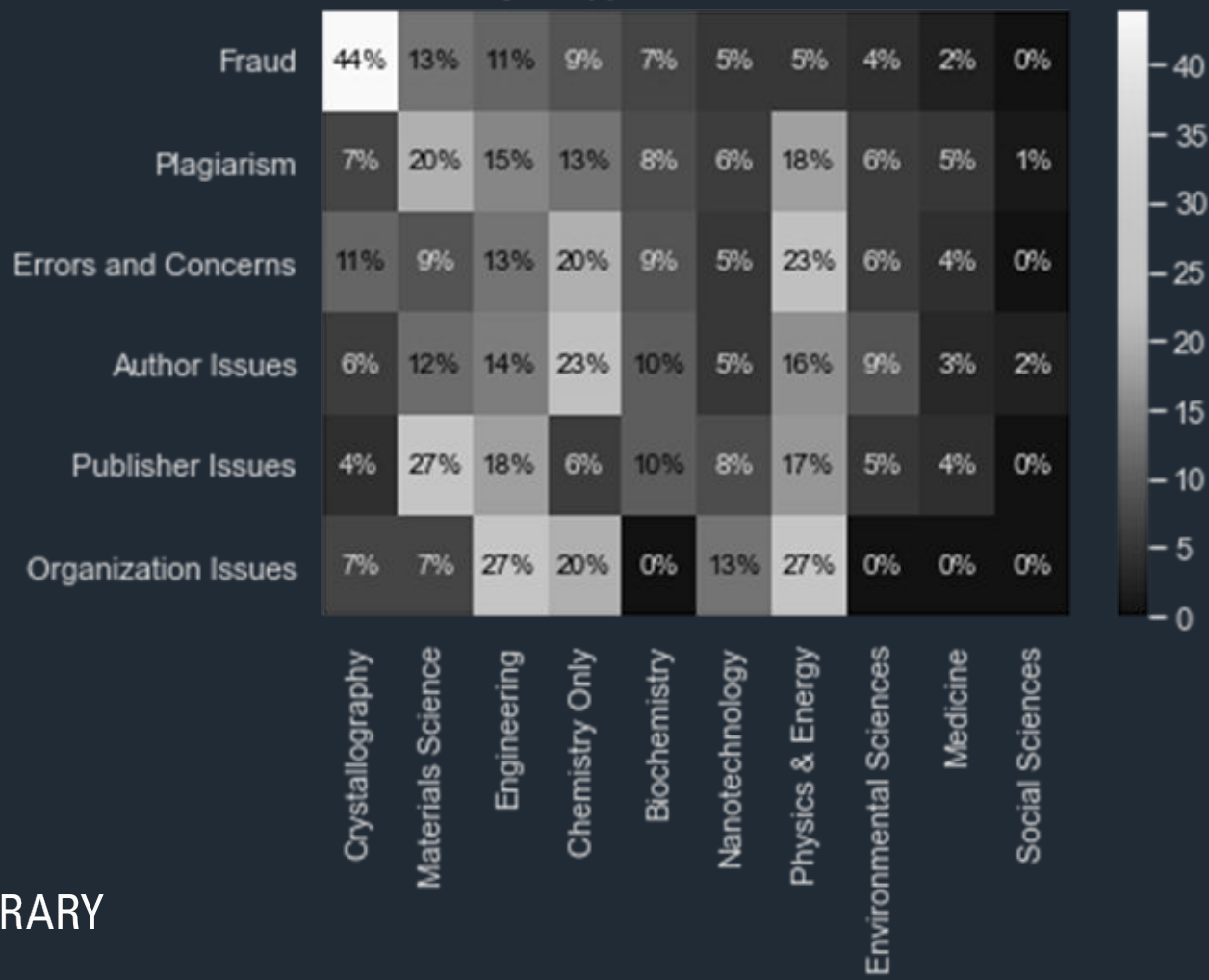
Organization issues

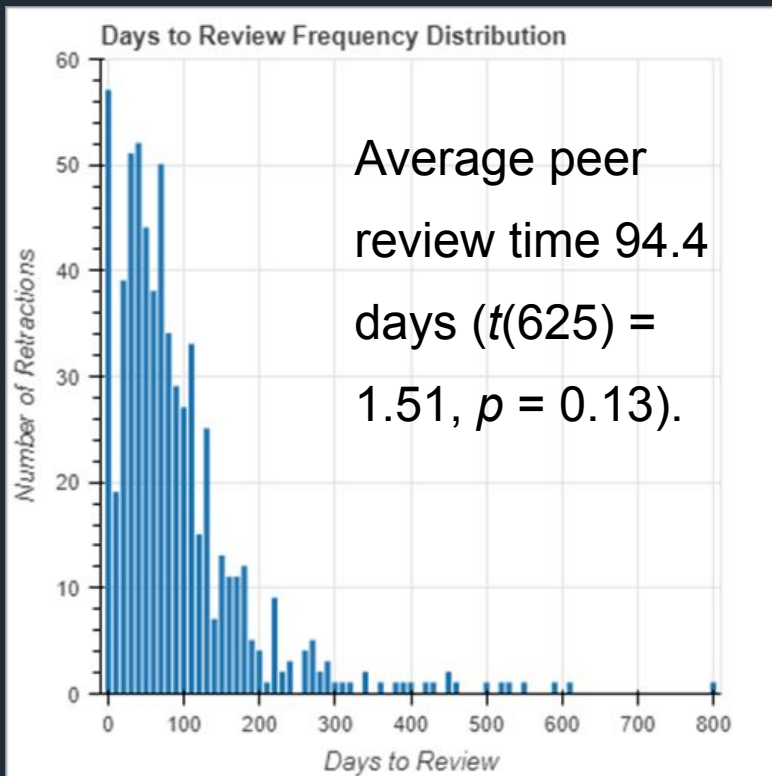
Reason unclear

Majority of Chemistry Manuscripts are Retracted due to Misconduct



Percent of Times Subject Appeared for each Main Retraction Reason





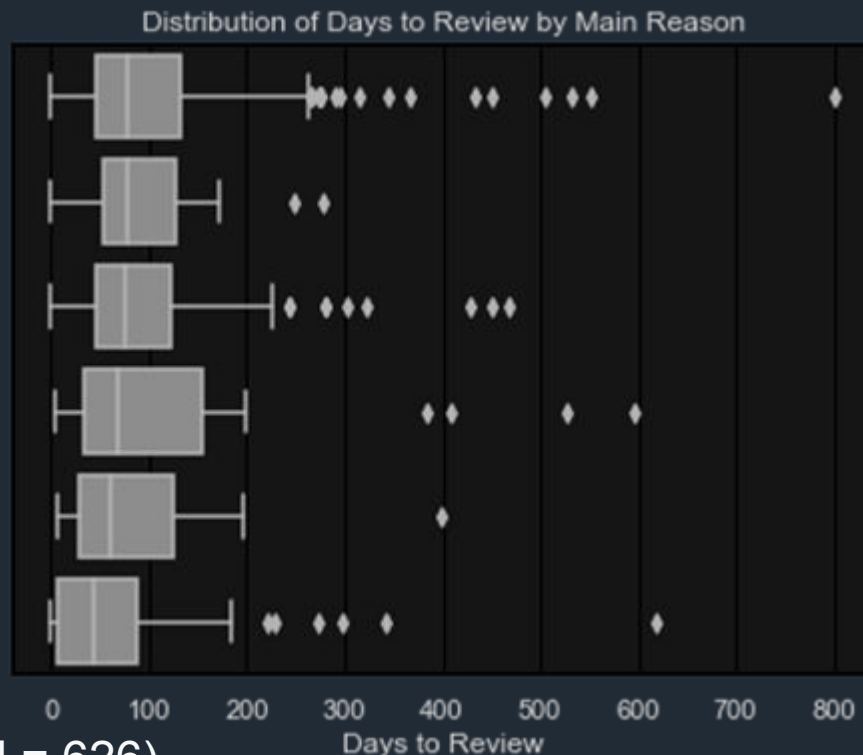
Median Peer-review time / Reason



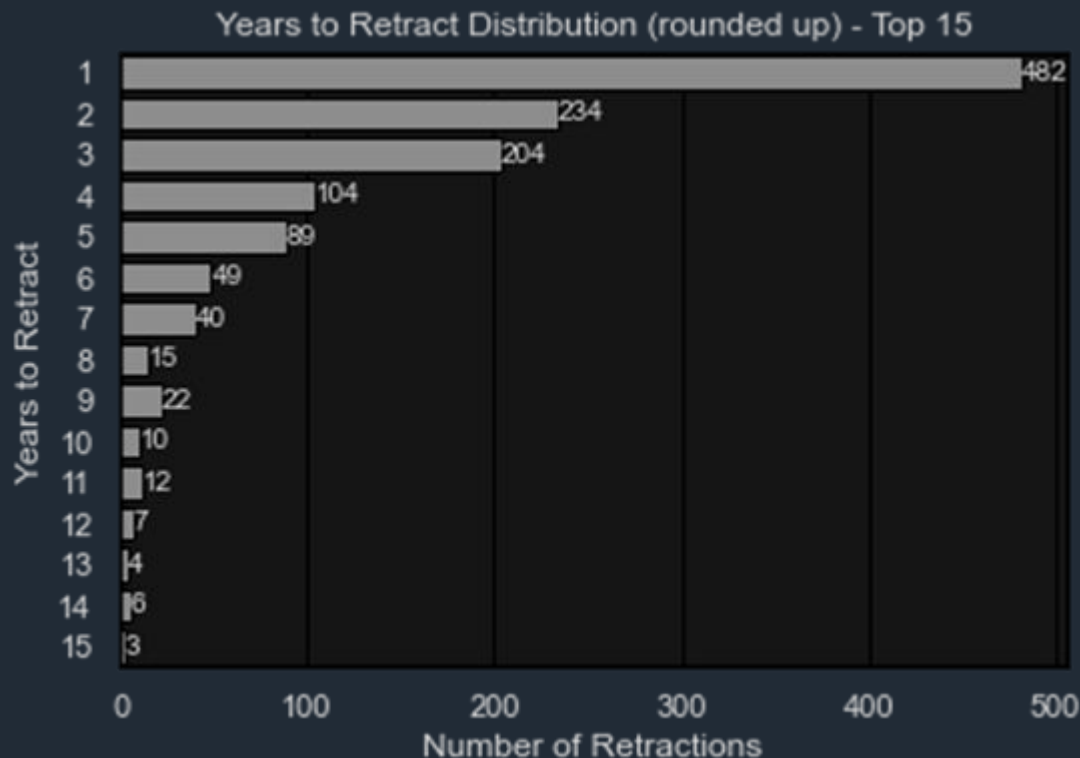
| Median | N |
|---------|-----|
| 79 days | 241 |
| 78 days | 38 |
| 76 days | 158 |
| 68 days | 31 |
| 60 days | 18 |
| 43 days | 139 |

Main Reason

Plagiarism
Author Issues
Errors and Concerns
Publisher Issues
Reason Unclear
Fraud



Median Retraction Time 1.7 years

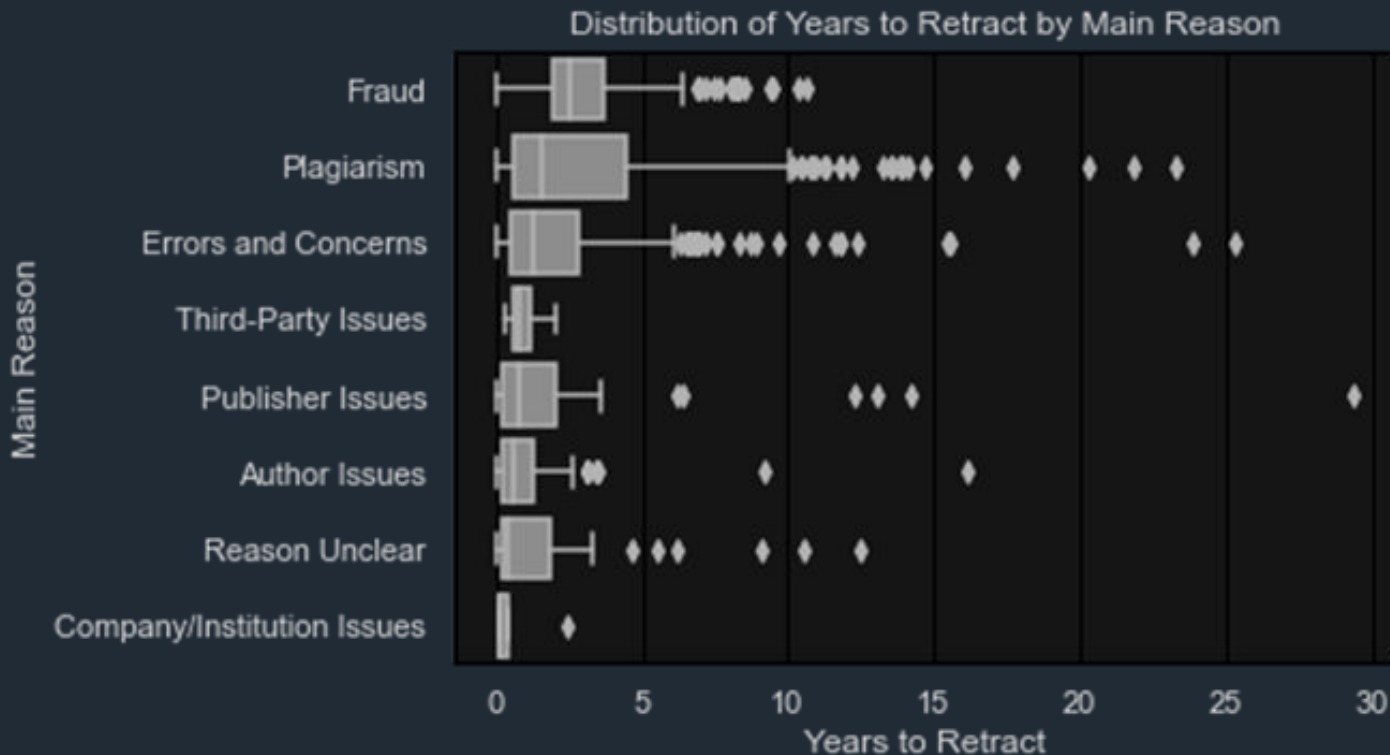


- 37% are retracted within the first year of publication;
- 12% of manuscripts (N = 154) are retracted within the first 3 months of publication;
- 3% (N = 43) were retracted after 10 years.

Retraction time / Reason



| Median | N |
|------------|-----|
| 2.56 years | 272 |
| 1.61 years | 484 |
| 1.25 years | 338 |
| 0.80 years | 6 |
| 0.75 years | 64 |
| 0.64 years | 72 |
| 0.42 years | 51 |
| 0.13 years | 5 |



Analysis of Retracted Manuscripts in Chemistry

Yulia Sevryugina* (yulias@umich.edu) & Ryan Jimenez



Analysis of Retracted Manuscripts in Chemistry: Errors vs Misconduct



In this Viewpoint we discuss Chemistry manuscripts retracted during the 2001–2021 period (a total of 1292 journal articles retrieved from the Retraction Watch database). We showed that 58.5% of Chemistry manuscripts were retracted due to misconduct; of them, 40.5% of retractions were due to self-plagiarism and 36% due to fraud. Errors and concerns unrelated to misconduct constituted 26% of all retractions. Retracted manuscripts had a median retraction time of 1.7 years and peer-review time of 71 days (but only 43 days for fraudulent manuscripts).

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Thanks! Questions?

Dr. Yulia Sevryugina, Chemistry Librarian - yulias@umich.edu

Peer-review time / Discipline



Median N

98 days 43

96 days 64

92.5 days 94

72 days 95

71 days 137

64 days 63

63 days 106

57.5 days 110

38 days 135

21 days 3

Subject Group

Medicine

Environmental Sciences

Biochemistry

Chemistry Only

Physics & Energy

Nanotechnology

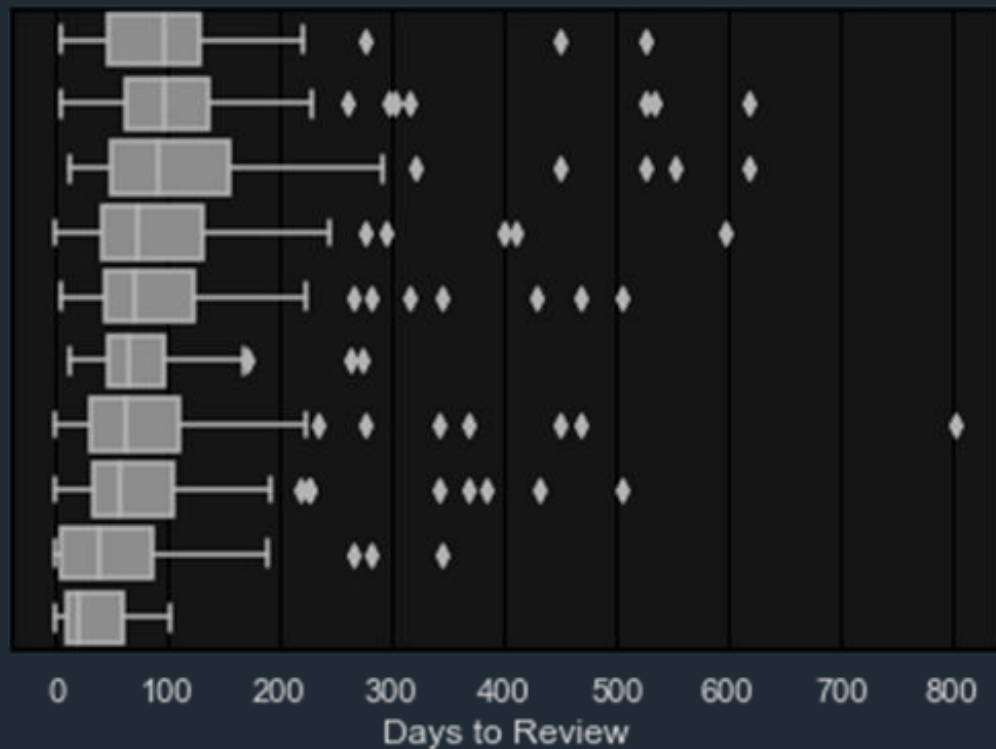
Engineering

Materials Science

Crystallography

Social Sciences

Distribution of Days to Review by Subject Group



Retraction time / Discipline



Median N

2.75 years 13

2.47 years 270

2.12 years 266

1.82 years 92

1.35 years 143

1.28 years 245

1.20 years 244

1.16 years 63

1.16 years 278

1.14 years 96

Subject Group

Social Sciences

Crystallography

Materials Science

Nanotechnology

Biochemistry

Chemistry Only

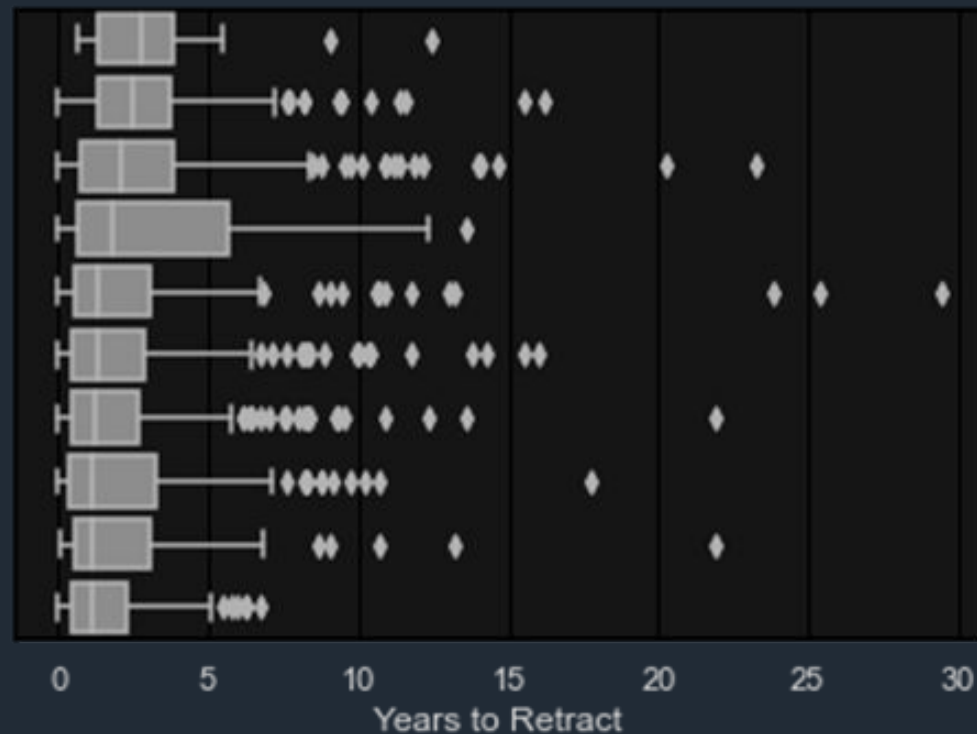
Engineering

Physics & Energy

Medicine

Environmental Sciences

Distribution of Years to Retract by Subject



Journals

