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EXECUTIVE EXCHANGE _____SUMMIT _____

10 March 2025



Agenda

March 10, 2025

11:00am - 11:15am | Welcome and Business Update

11:15am - 11:40am | **Aries 2025 Product Update**

11:40am - 1:15pm | **Lunch & Networking**

1:15pm - 2:15pm | **Combatting Research Integrity Challenges: Partner Solutions in Action**

Clear Skies Papermill Alarm Cactus Preflight for Editorial Desk

2:15pm – 2:55pm | **Open Discussion:** Exploring AI in Publishing: Opportunities, Challenges, & Future Direction

2:55 – 3:00pm | **Farewell**





Welcome and Introductions

Please share your name, title, organization, and goals for the meeting

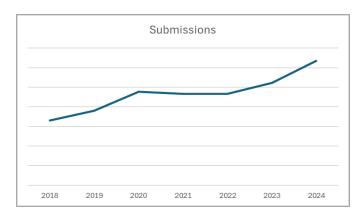


Business Update

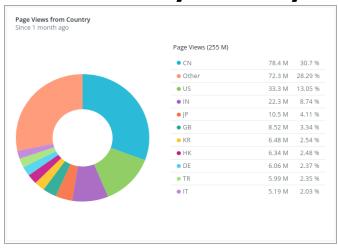
Jennifer Fleet, Managing Director

Business Update/2024 Wrap up

EM Submission Trends



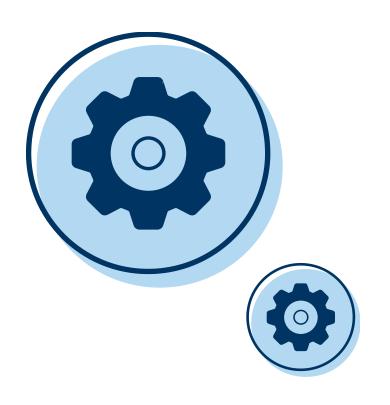
EM Traffic by Country



2024 Major Milestones

- Over 9000 publications using Editorial Manager (approximately 2600 of them are Elsevier titles).
- New partnerships/integrations:
 - Clearskies Papermill Alarm
 - Cactus Paperpal Preflight for Editorial
 - KGL Smartreview
- New product:
 - Find Reviewer using Scopus 17 customers
- Wrapped up our major project to migrate to Amazon Web Services.
- Significant updates to our user group meeting and customer outreach program.





Product Development Update

Jennifer Fleet, Managing Director

Product Development Themes

2025 Product Development Themes:

- Editorial Manager Workflow Enhancements
- Software Development Lifecycle Approach
- Editorial Manager Identity
- Partner Ecosystem and API services
- Accessibility Improvements

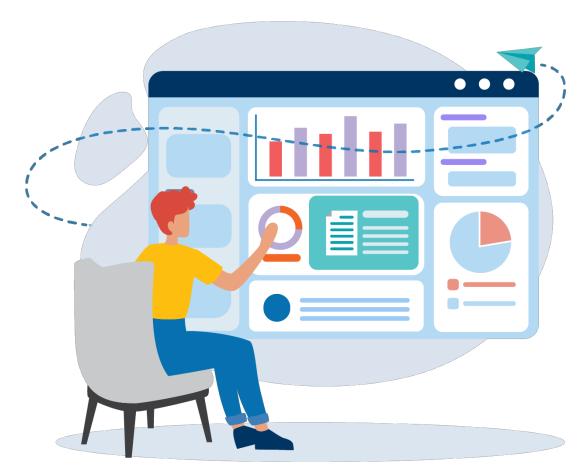




Editorial Manager Workflow Enhancements

Future Roadmap Planning and Discovery

- Author workflow enhancements
- Reviewer workflow enhancements
- AI and LLMs in scholarly publishing workflows





Editorial Manager Workflow Enhancements AI & LLMs in Scholarly Publishing



- Language editing and translations
- Journal compliance and scope checks
- Image alternative text for accessibility



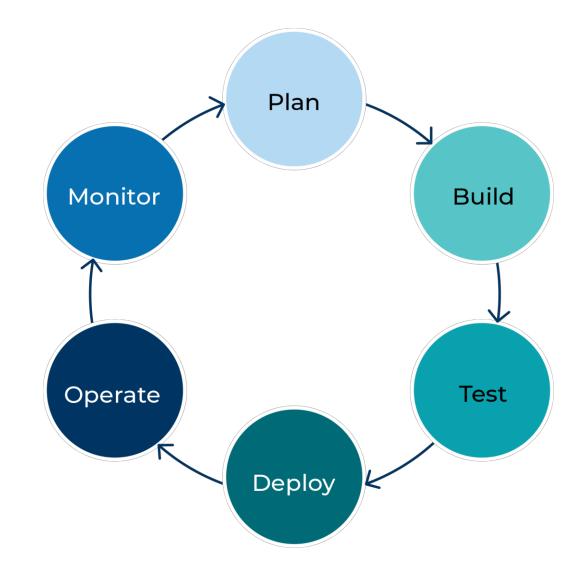
- Validating fit to journal scope
- Content highlights and summaries
- Content and identity integrity checks
- Accuracy of institution and funding body identifiers
- Reference checking and restructuring



- Recommend suitable reviewers
- Content translations for preferred language in peer reviewer
- Assisted peer review



Software Development Lifecycle Approach







Editorial Manager Identity

 Provide an improved user experience at log-in

Support integrity
 in the submissions workflow





Identity: Solution Approach

- Single EM user identity
- Seamless user experience for login as well as migrating to new account
- Support publisher SSO and ORCID/other standard
 IdPs (likely promotion of ORCID sign-up flow)
- Multi-factor authentication (MFA) support
- Staged rollout





Expanding our Ecosystem and API Services

- Strong ecosystem supporting a variety of use-cases through strategic partnerships
- Growing community of integrity vendors:
 - Manuscript content checks
 - Image integrity
 - Duplicate submissions
 - Author confidence

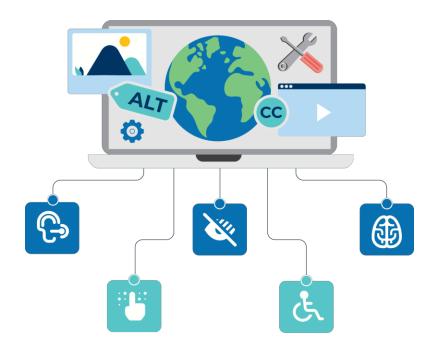
- Elsevier submissions tools being integrated into EM, or offered to the market:
 - Find Reviewers using Scopus





Accessibility Improvements

- Compliance with the European Accessibility Act by June 2025
- Compliance with the American Disabilities Act II by April 2026

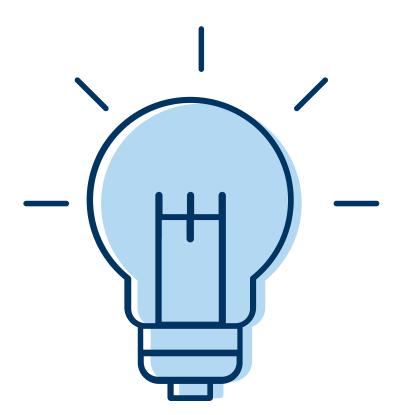






Lunch & Networking

11:40am - 1:15pm



Combatting Research Integrity Challenges: Partner Solutions in Action

Current Threats to Research Integrity

- Plagiarism of content
- Data Falsification
- Manipulated images
- Author disputes
- Conflicts of interest
- Citation manipulation





The Aries Ecosystem: Integrated Solutions

- Connects EM users with best-in-class, inhouse and third-party tools and services
- Enables publishers to address new initiatives and workflow/quality gaps without additional investment
- Many tools available to support research integrity
- Recent strategic partnerships focused on papermills, reproducibility, and quality





Partner Spotlight: CACTUS.

Paperpal Preflight for Editorial Desk

. . .





For Editorial Desks

Hybrid AI + Human-powered service for in-house research integrity checks and more.

January 2025



CACTUS



Artificial Intelligence

 Suite of custom AI Solutions delivered through CACTUS Labs - the grand idea factory and engineering future of scitech



People

- Leveraging the strengths of:
 - An in-house team of 2,000 subject matter experts
 - A global pool of 5,000+ freelance specialists
 - Key regional strengths (onground presence in 7 countries)



Augmented Workflows

 Deep understanding of publisher processes and efficiency-driven workflows that are continuously enhanced by automation

Al Solutions: Increase discoverability, accessibility, engagement, and efficiency



300+ in-house tech team

Including 50+ data scientists, linguists, and AI experts



20+ content partnerships

Including Elsevier, T&F,
Springer Nature, SAGE, PNAS



90% positive user feedback

On relevance of papers recommended



1 Bn+ words

Processed using our AI tools



AWS Award

Awarded for Best Innovation Leveraging AI Technologies at the Amazon AI Conclave in 2022



30+ in-house solutions deployed for 4 Mn+ users

Across R Discovery, Paperpal, and Mind the Graph



Discoverability

- Recommender system
- Semantic search & Gen Al search
- Document & SDG classifiers
- LLMs, Ontologies
- Concept-Keyword-Key phrases extraction

Accessibility & Engagement

- Al Audio (multilingual)
- Al Translation
- Co-pilot/ Gen AI chatbot
- AI + Expert-driven academic & plainlanguage summarization
- Multi-lingual search

Research Integrity & Language Expertise

- Research integrity
- Language checks
- Technical checks
- Assistive writing



Empowering Editorial Desks

with Paperpal Preflight

Hybrid AI + Human powered solution for Editorial Desks





Paperpal Preflight for Editorial Desk (PPE): 3 Key Components

Research Integrity

- Papermill activity authorship, fabricated content, references, image duplication
- Transparency relevant and complete disclosures
- Science content, scope match, unethical language

Language Check + Edit

Language quality checks and Al editing for

- Grammar & Syntax
- Mechanics & Style
- Word choice & vocabulary

Technical Compliance

Journal submission requirements checks, including

- Tables & Figures
- Metadata
- Counts, limits



Paperpal Preflight for Editorial Desk (PPE): Research Integrity

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Al Research Integrity Checks & Composite Scoring



Transparency

Ensures research openness by verifying data access, ethical practices, and funding sources (need, presence, and completeness)

- Data availability statement
- Ethics approval statement
- Patient/participant consent
- Funding information
- Author contributions
- Consent for images

Composite score of 6 Transparency markers

Papermill Activity

Identifies potential papermill activity through analysis of authorship, fabricated content, citations, and image duplication

- **Authorship**: Affiliations, previous retractions, number, geographic distribution
- **Fabricated content**: Al Gen text, tortured phrases, nonsense phrases, LLM response trace
- Citations: Excessive citations to the same lab/group, to unrelated work, to retracted work, and self-citations; reference URL validity
- Image integrity: Garbled text in images, duplication of parts/whole images within the manuscript (add-on)

Composite score of 11 Papermill Activity markers

Science

Analyzes article structure, content match between sections, journal scope match, and use of inappropriate language

- Journal subject area match
- Appropriate article sections
- Abstract and article content match
- Reference age distribution
- Inappropriate language (sexism, racism)

Composite score of 5 Science markers

Manuscript Final Composite Score







What can PPE help you assess? Human Checks





Research Integrity Human Reviews

Optional human checks for

- conclusive decision making on integrity or submissions
- ✓ in-depth audits
- customized case investigations

Rapid Checks - Categorizing Submissions

Checks to ensure clear and accurate communication in written content

Article usage, Determiners, Verb form & tense, Noun numbers, Order errors, Subject-verb agreement

Comprehensive Checks – Audit/ Case Investigation

Post-peer-review audit of accepted manuscripts to flag compromised content

Prevent fraudulent content from going into production, thereby **reducing potential retractions**

Post-publication audit of published manuscripts through **40+ human checks** to flag potential retractions and identify trends and patterns of fraudulent activity

In-depth **review of editorial and peer review processes** to identify gaps – particularly for suspicious journals/ special issues





Paperpal Preflight for Editorial Desk (PPE): Language

Research Integrity

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Technical Compliance

Journal submission requirements checks, including

- Tables & Figures
- Metadata
- Counts, limits



What can PPE help you assess?





Check Language Quality

Checks for language quality including grammar, readability, writing mechanics, and academic vocabulary



For manuscripts flagged as "Warning" after AI checks, a human Rapid Check is conducted on the AI report for accurate classification into "Pass" or "Critical"

Hybrid AI + Human checks complete conclusive, accurate bucketing of all submissions into "pass" or "critical" for the Editorial desk

Mechanics & Style

Checks to refine the overall presentation and coherence of written content

Punctuation, Spelling, Spacing, Contractions, Capitalizations, Number styles

Word choice & vocabulary

Checks for issues concerning the precision and appropriateness of language

Word usage, Prepositions, Adjectives, Pronouns, Conjunctions





Paperpal Preflight for Editorial Desk (PPE): Compliance

Research Integrity

- Papermill activity authorship, fabricated content, references, image duplication
- Transparency relevant and complete disclosures
- Science content, scope match, unethical language

Language Check + Edit

Language quality checks and Al editing for

- Grammar & Syntax
- Mechanics & Style
- Word choice & vocabulary

Technical Compliance

Journal submission requirements checks, including

- Tables & Figures
- Metadata
- Counts, limits



What can PPE help you assess?





Check Technical Compliance

Checks for technical requirements related to limits, structure, citations, disclosures, figures, tables, etc.



Tables & Figures

Checks to verify the appearance and inclusion of Tables and Figures

Figure Citations, Figure Legends, Table Citations, Table Legends



Metadata

Checks for information optimized for effective searchability and discoverability

Title & keywords, Corresponding author email, Contributing author info, Article type



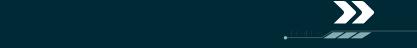
Checks for issues concerning specified guidelines on counts of elements in the manuscript







How it **WORKS**



Q



Cactus Test Site - cloned from default 17.0

Home Main Menu Submit a Manuscript About V Help V Shortcuts V Simple Submission Search

Welcome to Editorial Manager® for THE JOURNAL TITLE

Insert Special Character

Cover

Image

Here

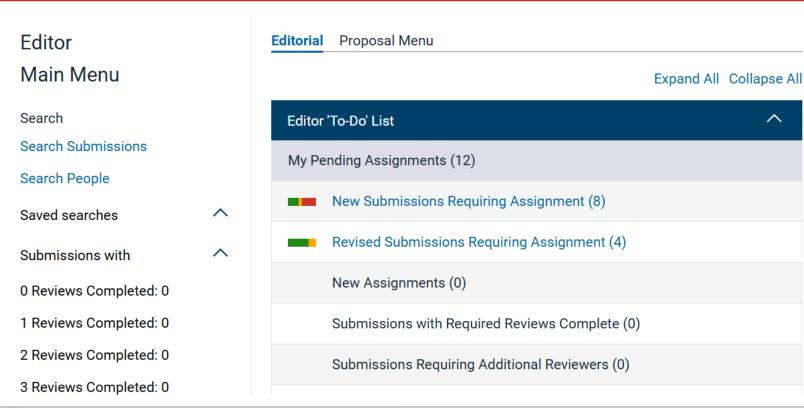




Cactus Test Site - cloned from default 17.0

Home Main Menu Submit a Manuscript About V Help V Shortcuts V Simple Submission Search

Important Message: Site under development. Do not use for live manuscript submission.





Simple Submission Search

Q

▼ Collapse



Quicklinks

Home

Cactus Test Site - cloned from default 17.0

Main Menu

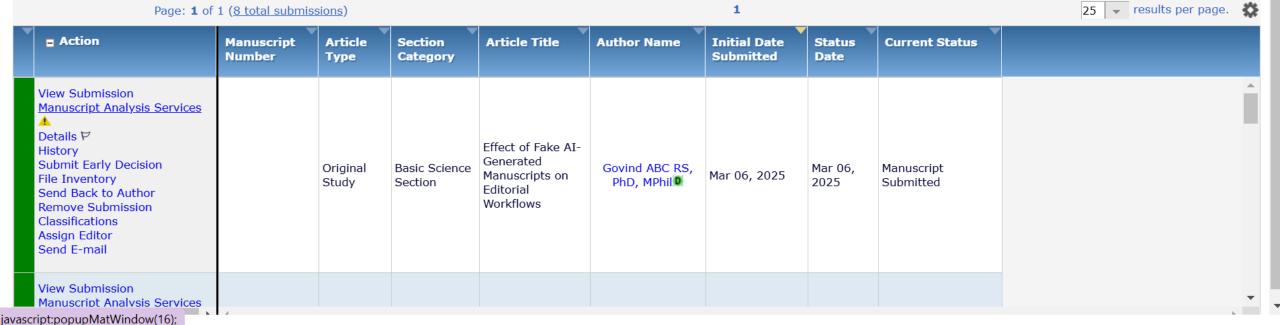
Submit a Manuscript Help 🗸 Important Message: Site under development. Do not use for live manuscript submission.

About V

New Submissions Requiring Assignment - Govind ABC RS, PhD, MPhil

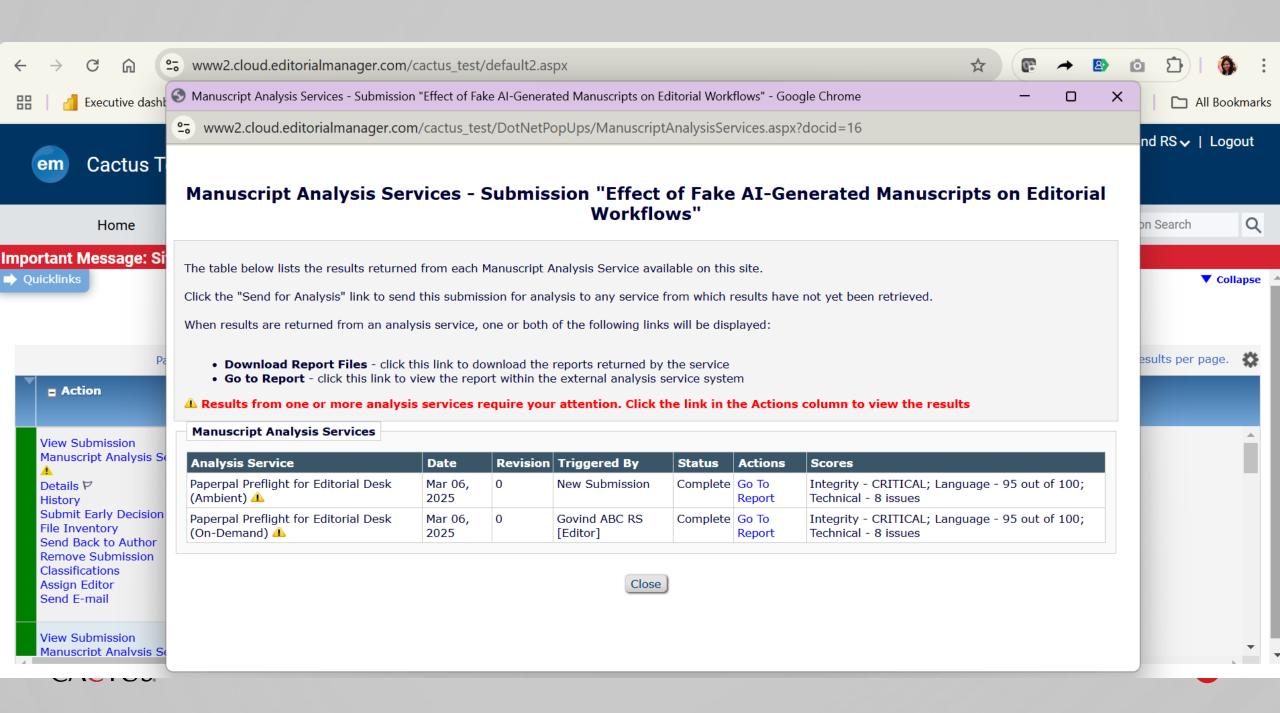
Shortcuts V

Contents: These are the new submissions that require an Editor Assignment. Use the up/down arrows to change the sort order.



CACTUS.

Exclamation on Manuscript Analysis Service if the RI check result is Warning/ Critical



MANUSCRIPT ASSESSMENT

Checked cactus_test-S-25-00010R0.pdf

For Em Ambient Test Journal

Summary

Integrity (i)

CRITICAL

(AI-reviewed)

95 ③

Score (on 100)

Language 3

Technical (i)

8

Issues

Detailed report $\underline{\Psi}$

Research Integrity

CRITICAL (AI-reviewed)

⊙ Sent for IntegrityGUARD Rapid Check

Papermill Activity

Authorship-related issues identified

- There is a mismatch between author affiliation(s) and the manuscript's field of study.
- At least one of the authors have had their previous articles retracted. Read More

Download the edited manuscript

Uploaded manuscript



cactus_test-S-25-000....pdf



The downloaded file has language edits as track changes and annotations to identify the technical compliance issues.

Download the edited file



Research Integrity

CRITICAL (AI-reviewed)

⊙ Sent for IntegrityGUARD Rapid Check

Papermill Activity

Authorship-related issues identified

• There is a mismatch between author affiliation(s) and the manuscript's field of study.

At least one of the authors have had their previous articles retracted. Read Less

One author has previous article retraction(s) with problematic reasons. Details:

- Dingjun Hao
 - https://doi.org/10.1186/s13018-021-02748-0 Error in Data, Error in Methods, Upgrade/Update of Prior Notice

Reference-related issues identified

- Some citations may be retracted Read More
- Several cited articles belong to the same author or lab group Read More

② 2 checks passed!

- No fabricated text was detected
- No image manipulation detected in the manuscript

Transparency

① Disclosure-related issues identified

- Data Availability Statement is missing
- Ethics Statement is missing
- A funding statement is present, but no funding source was detected Read More



MANUSCRIPT ASSESSMENT

for cactus_test-S-25-00010R0.pdf

Checked for

Em Ambient Test Journal

Research Integrity - CRITICAL (Al-powered review)

Papermill Activity

Authorship-related issues identified

- There is a mismatch between author affiliation(s) and the manuscript's field of study.
- At least one of the authors have had their previous articles retracted.

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Reference-related issues identified

· Some citations may be retracted

2 retracted articles (1%) have been cited in the manuscript. These are:

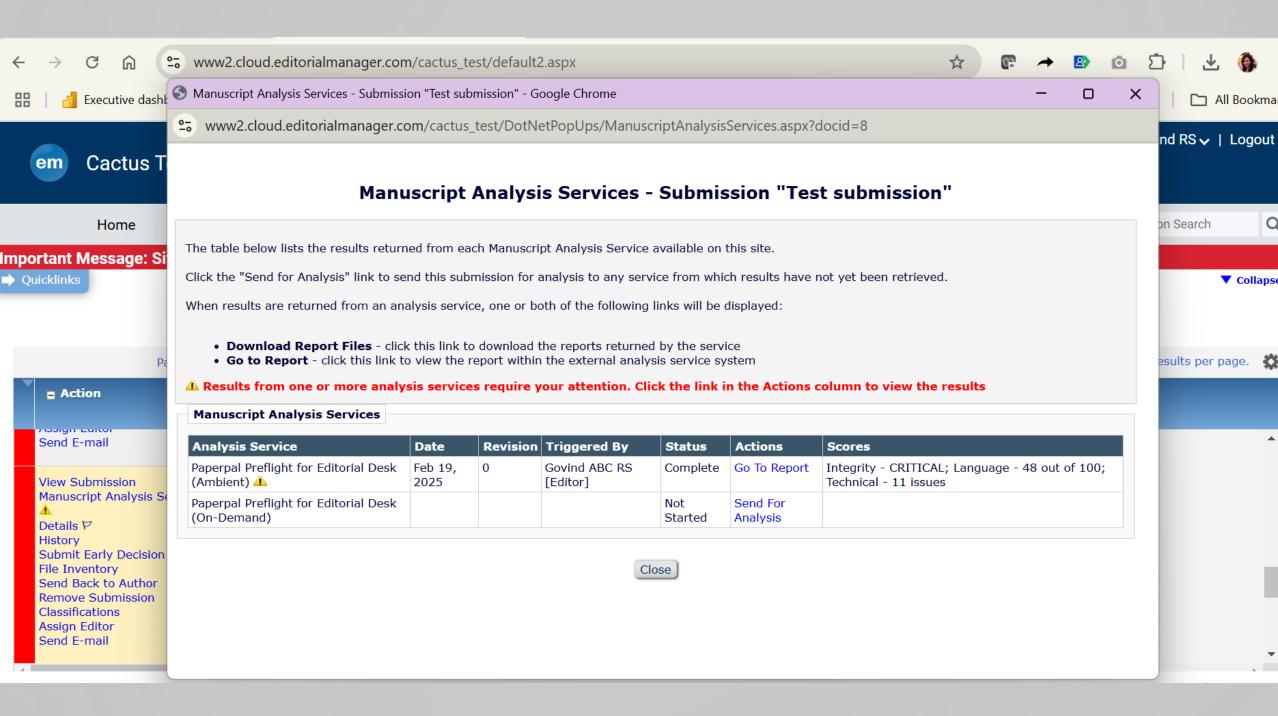
- Masztalerz, A., Zeelenberg, I. S., Wijnands, Y. M., de Bruijn, R., Drager, A. M., Janssen, H., et al. (2007). Synaptotagmin 3 deficiency in T cells impairs recycling of the Frontiers in Cell and Developmental Biology frontiersin.org 10 Guo et al. 10.3389/fcell.2023.1339390
- Conrad, S., Renninger, M., Hennenlotter, J., Wiesner, T., Just, L., Bonin, M., et al. (2008).
 Generation of pluripotent stem cells from adult human testis. Nature 456 (7220), 344-349.
 doi:10.1038/nature07404
- · Several cited articles belong to the same author or lab group

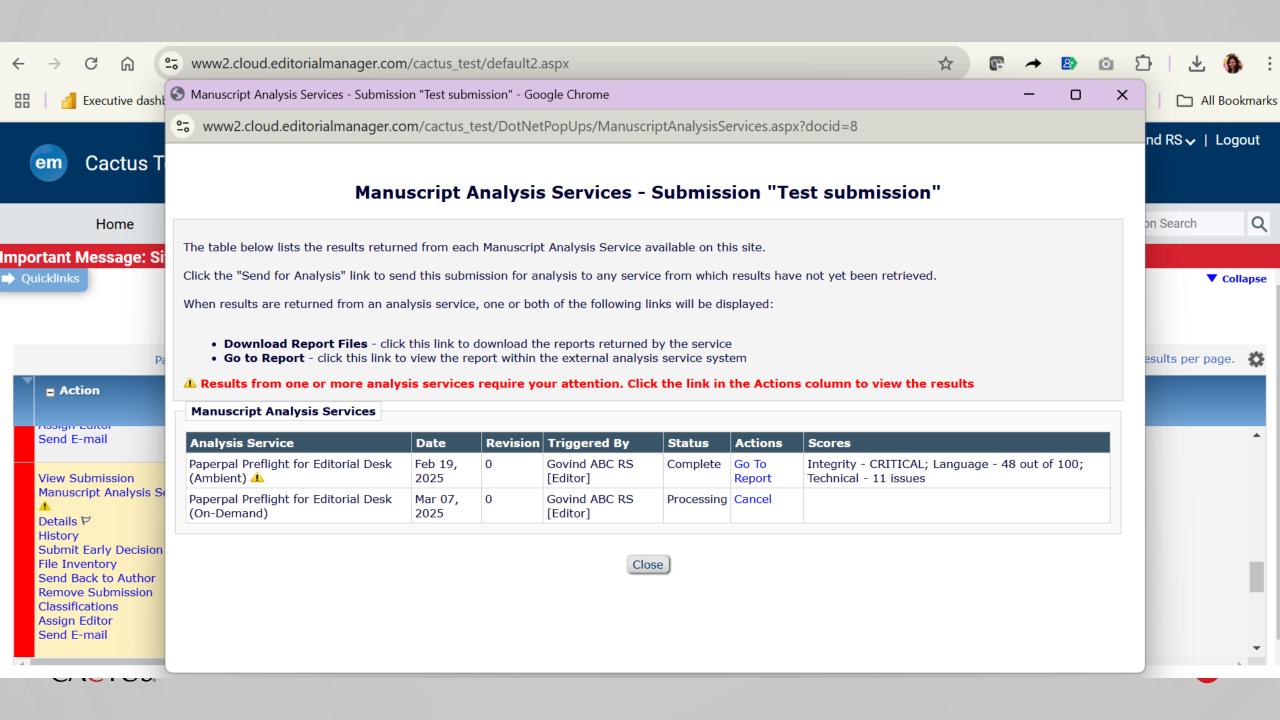
26% of references are detected to be from the same author/lab group (potential citation cartel):

Summary

- Ralph L Brinster 9 references
- o Jon M Oatley 8 references
- Mary R Avarbock 8 references
- Mito Kanatsu-Shinohara 7 references
- o Melissa J Oatley 5 references
- Jiang Wu 4 references
- Kimiko Inoue 4 references
- o Amy V Kaucher 4 references
- Erika Matunis 4 references
- o Hiroshi Kubota 4 references

Heilere Man 2 -- ferrence





Precision Unleashed: Tool Accuracy



Overall F-score of the tool: 92%

- **Precision (91%):** Out of all the issues that we flag, ~91% are genuine, while ~9% are false positives, meaning there are some manuscripts mistakenly flagged as problematic.
- **Recall (93%):** Out of all the actual issues present in the manuscripts, ~93% are correctly identified by the tool, but ~7% of issues are overlooked or missed, leading to false negatives, where genuine problems are not identified.

Benchmarked Against Human Experts: Accuracy rigorously tested against evaluations by expert human reviewers, ensuring its reliability

Real-world Testing: Effectiveness validated through tests featuring actual compromised manuscripts

Category-wise breakup of the accuracy numbers:

| Check Category | Precision | Recall | F-Score |
|---------------------|-----------|--------|---------|
| Paper Mill Activity | 91% | 93% | 92% |
| Transparency | 95% | 92% | 93% |
| Science | 88% | 95% | 91% |



Our **USPs**



Powered by **custom-built machine models** (100% in-house)



Hybrid: Al checks + human reviews



High **Accuracy**Overall F-score of the tool: 92%
(Precision: 91%; Recall: 93%)



Customizable to journal / article type / reporting / analytics



Continuously evolving – dedicated Preflight Research and Data Science team



Integration – APIs, Editorial Manager, Cactus Triage Editor







THANK YOU

Shilpi Mehra

Associate Director, Research Integrity & Paperpal Preflight

E: shilpi.mehra@cactusglobal.com



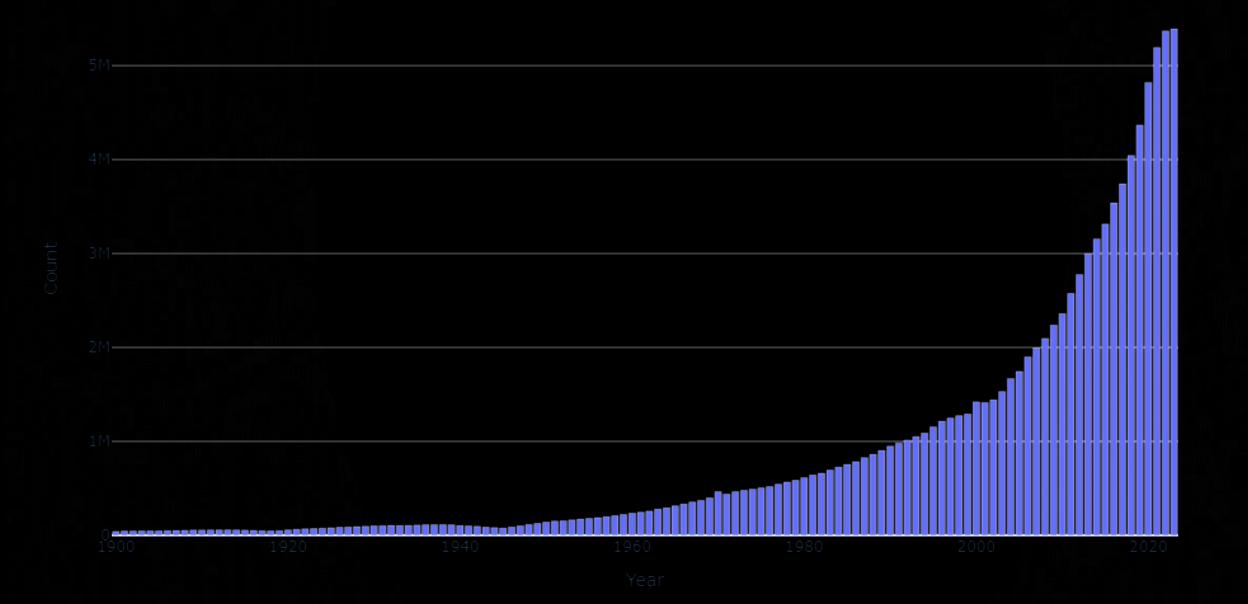
Partner Spotlight: Clear Skies



Papermill Alarm

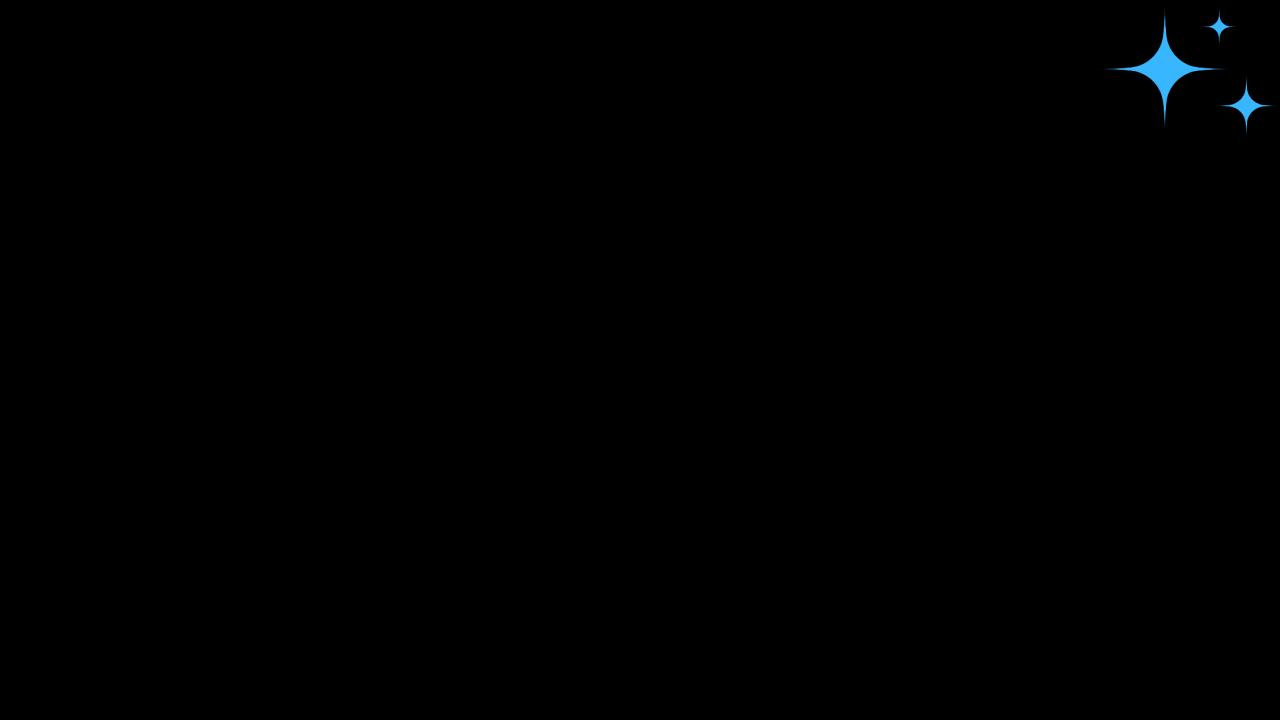
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DOI Registrations by Year



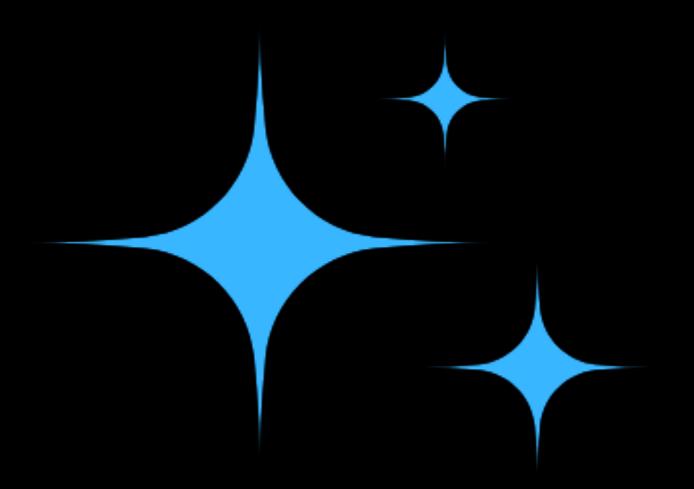
Clear Skies APIs

Adam Day CEO & Founder Clear Skies





Results



Best-estimate for scale of problem

nature

Explore content > About the journal > Publish with us > Subscribe

<u>nature</u> > <u>news</u> > article

NEWS | 06 November 2023

How big is science's fake-paper problem?

An unpublished analysis suggests that there are hundreds of thousands of bogus 'pmill' articles lurking in the literature.

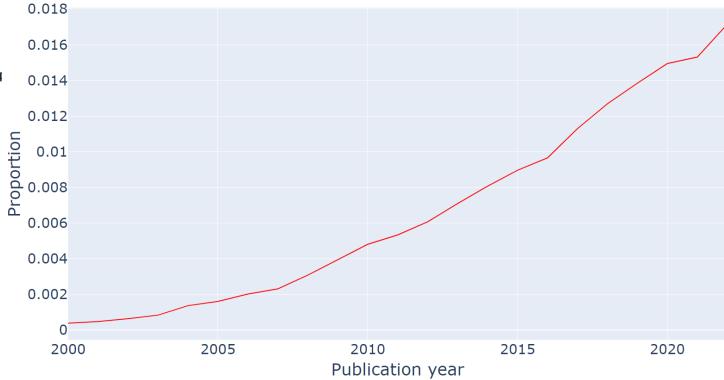
Richard Van Noorden





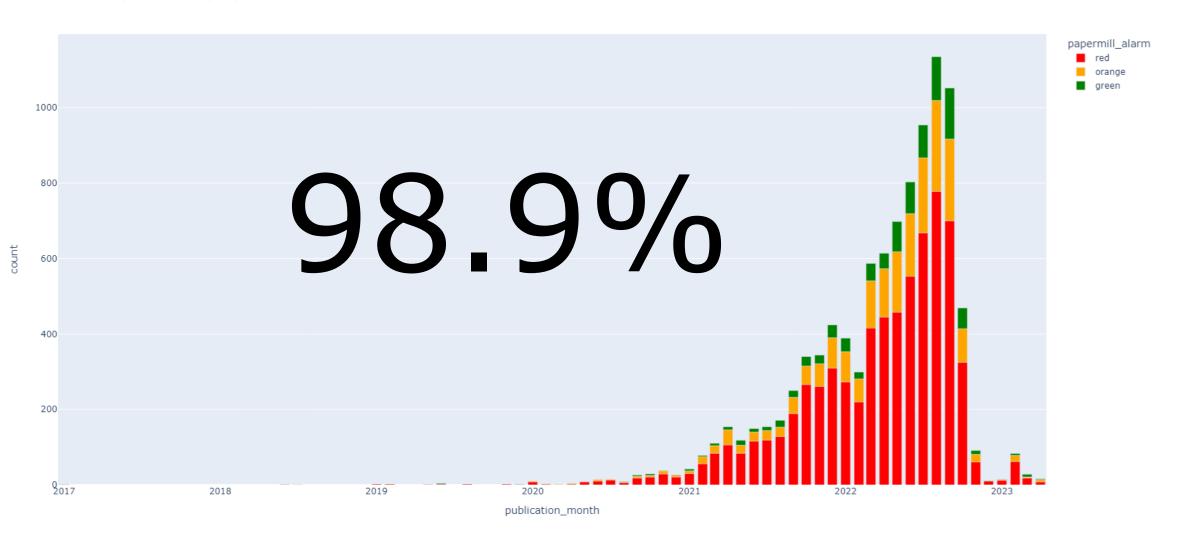


Publication RATE by Papermill Alarm status



Hindawi's retractions

Retracted publications by Papermill Alarm status





Web of Science delistings



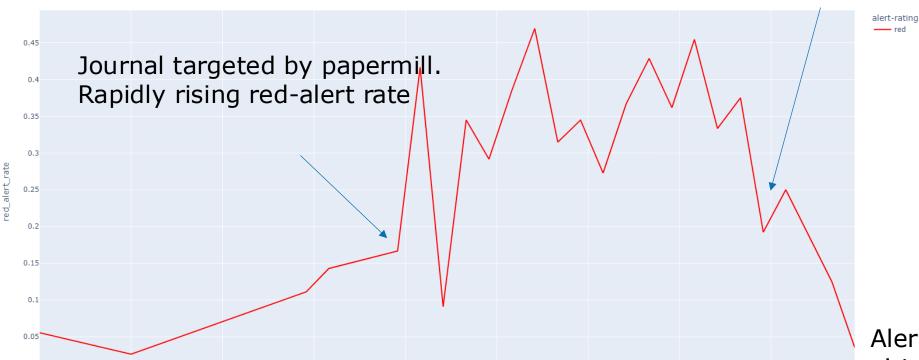
Results

2015

Papermill Alarm. Red alert rate

2017

2018



publication_month

2020

2021

2022

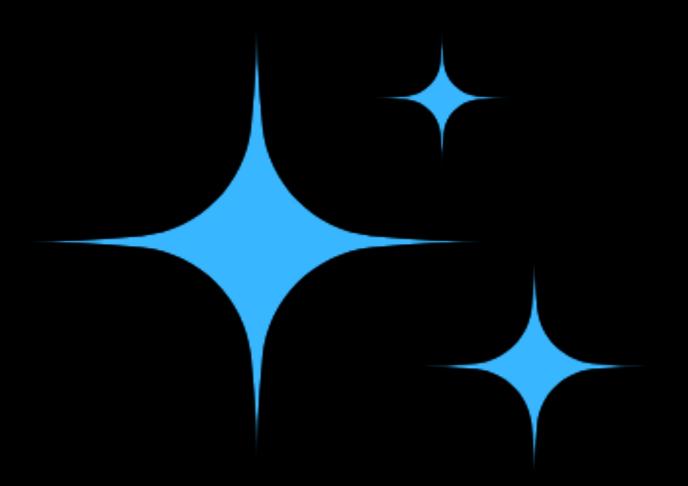
2023

Journal begins using the Papermill Alarm to scan all submissions at the start of 2023

Alert rate is now virtually zero.



Services



Simple, actionable, insight



- Red: low false-positive rate
 - Action: investigate



- Orange: low false-negative rate
 - Action: Non-onerous checks
 - Get good referees



- Green: no significant signals
 - Action: peer-review as normal



Home Main Menu Submit a Manuscript About ∨ Help ∨ Shortcuts ∨

Important Message: Site under development. Do not use for live manuscript submission.



New Submissions Requiring Assignment - Adam Day

Contents: These are the new submissions that require an Editor Assignment. Use the up/down arrows to change

| Page: 1 of 2 (34 total submissions) | | | | | | | | 1 2 > >> | |
|---|----------------------|-------------------|---------------------|---|-------------|---------------------------|-----------------|--------------------------|--|
| = Action | Manuscript Number | Article Type | Section Category | Article Title | Author Name | Initial Date Submitted | Status Date | Current Status | |
| View Submission Manuscript Analysis Services Details V History File Inventory Send Back to Author Remove Submission Classifications Assign Editor Send E-mail | | Original Study | | C-arm Fluoroscopy- Guided Percutaneous Needle Biopsy for the Diagnosis of Spinal Infection: A Study of 203 Consecutive Patients | Adam Day | Aug 16, 2024 | Aug 16, 2024 | Manuscript Submitted | |
| View Submission Manuscript Analysis Services Petails History File Inventory Send Back to Author Remove Submission Classifications Assign Editor Send E-mail | | Original Study | | GINS4 suppresses ferroptosis by antagonizing p53 acetylation with Snail | Adam Day | Aug 16, 2024 | Aug 16, 2024 | Manuscript Submitted | |
| View Submission Manuscript Analysis Services Details History File Inventory Send Back to Author Remove Submission | | Original Study | | Long noncoding RNA LINC00673- v4 promotes aggressiveness of lung adenocarcinoma via activating | Adam Day | Aug 15, 2024 | Aug 15, 2024 | Manuscript Submitted | |

| Manuscript Analysis Services - Submission "GINS4 suppresses ferroptosis by antagonizing p53 acetylation with Snail" - Google Chrome |
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>

 $editorial manager. com/clear skies_test/DotNetPopUps/ManuscriptAnalysisServices. as px?docid=34$

Manuscript Analysis Services - Submission "GINS4 suppresses ferroptosis by antagonizing p53 acetylation with Snail"

The table below lists the results returned from each Manuscript Analysis Service available on this site.

Click the "Send for Analysis" link to send this submission for analysis to any service from which results have not yet been retrieved.

When results are returned from an analysis service, one or both of the following links will be displayed:

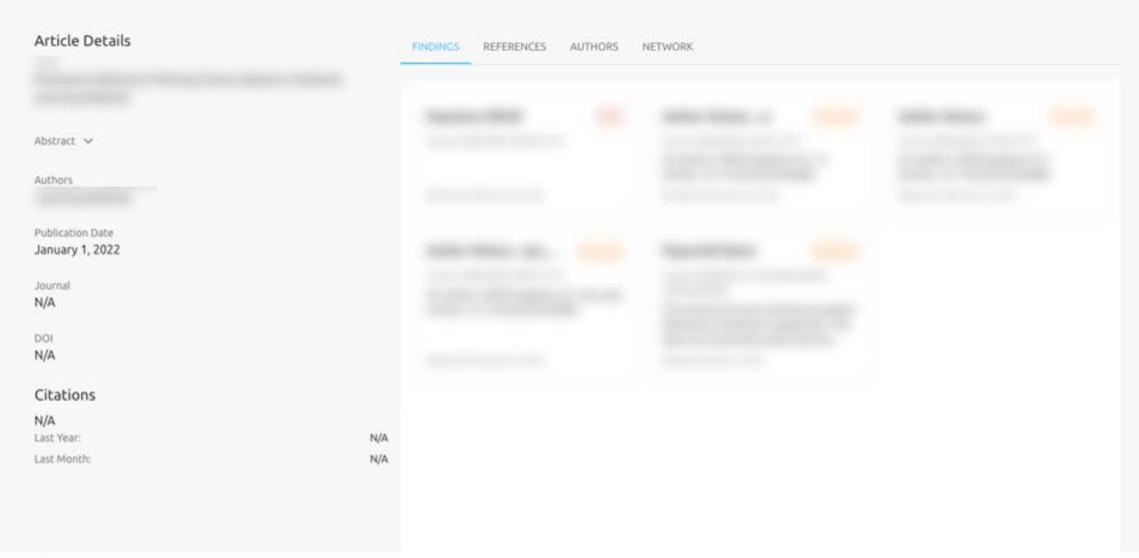
- . Download Report Files click this link to download the reports returned by the service
- . Go to Report click this link to view the report within the external analysis service system

A Results from one or more analysis services require your attention. Click the link in the Actions column to view the results

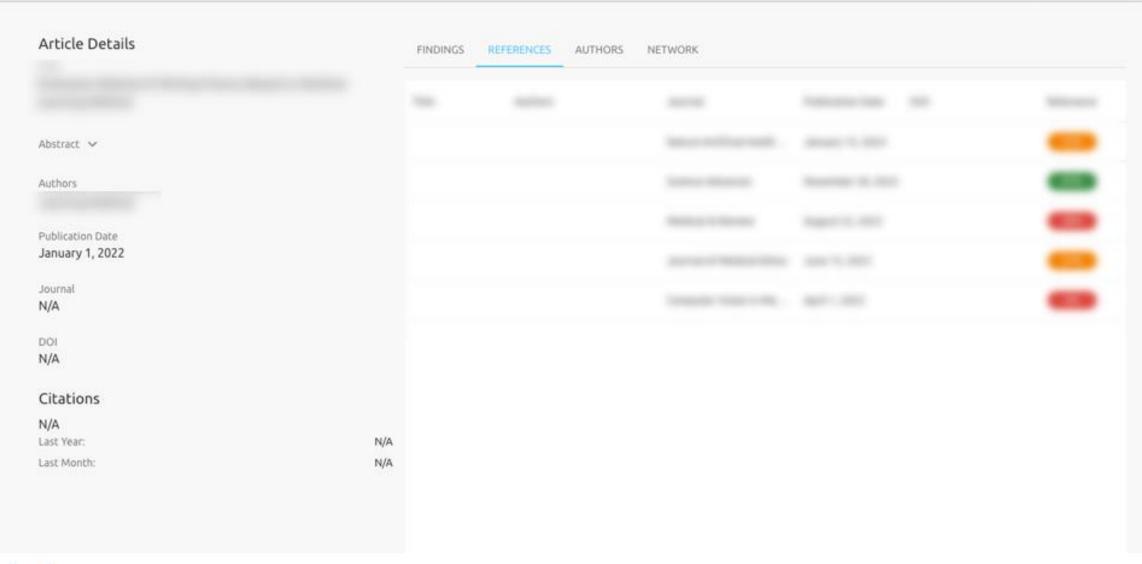
Manuscript Analysis Services

| Analysis Service | Date | Revision | Triggered By | Status | Actions | Scores |
|--------------------------|-----------------|----------|-------------------|----------|---------|--|
| Papermill Alarm DEV 4 | Aug 16, 2024 | 0 | New Submission | Complete | | Red - This article has high similarity to papers believed to originate in papermills. This does not necessarily mean that this paper originated in a papermill. No valid reference DOIs found in the input data. This will affect the accuracy of alerts |

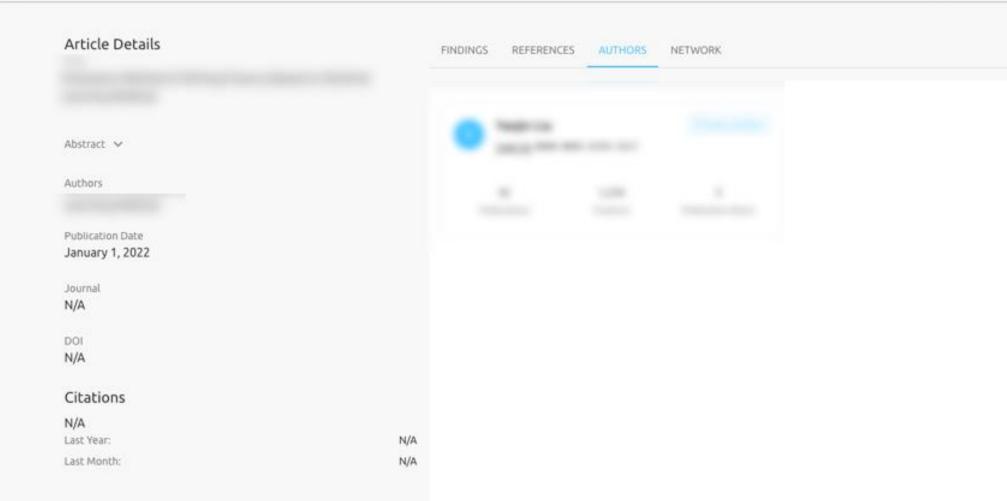
Close



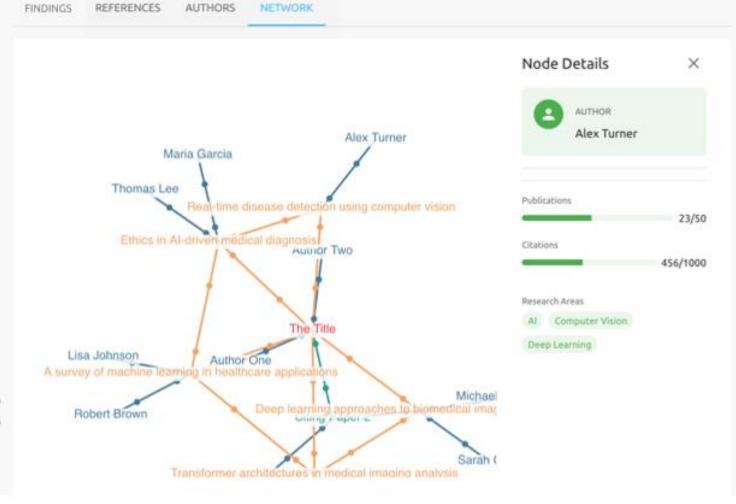








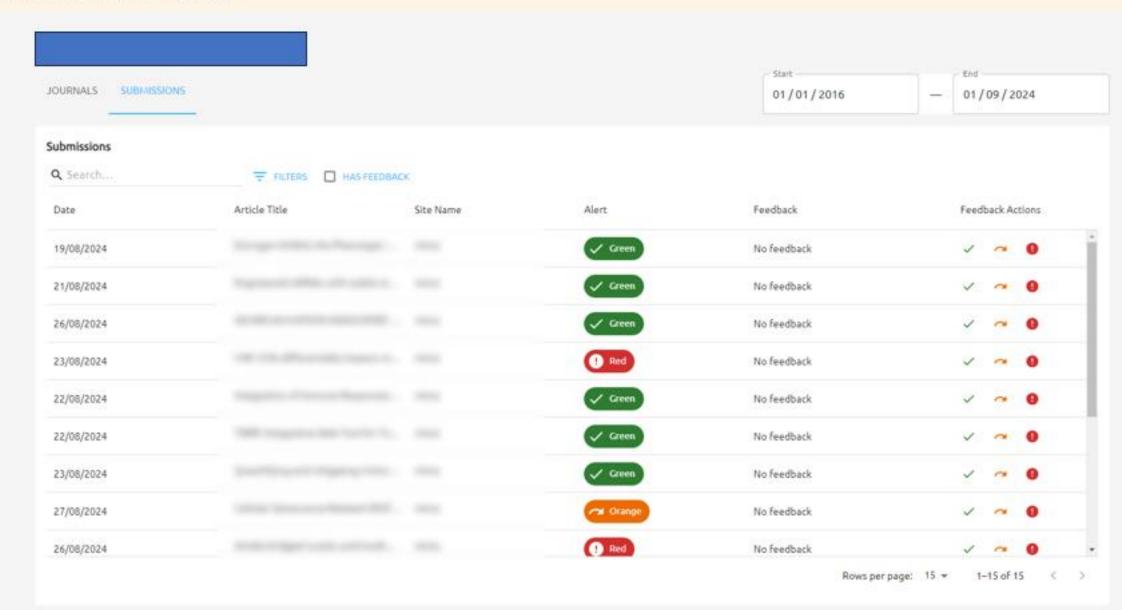


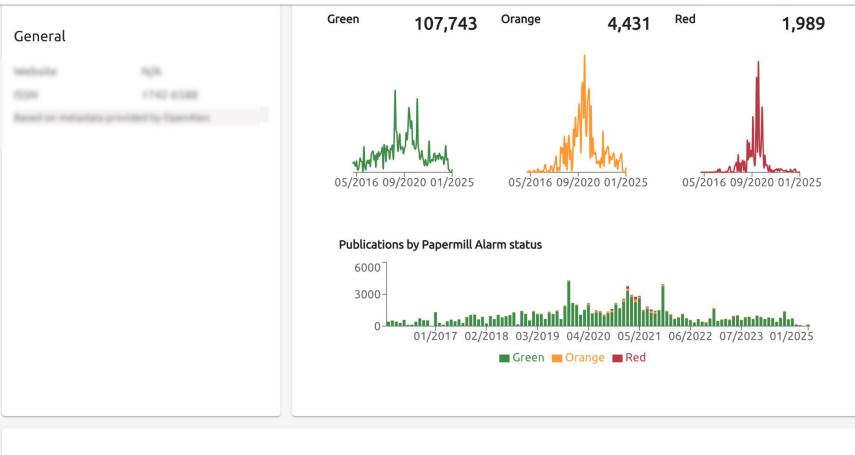


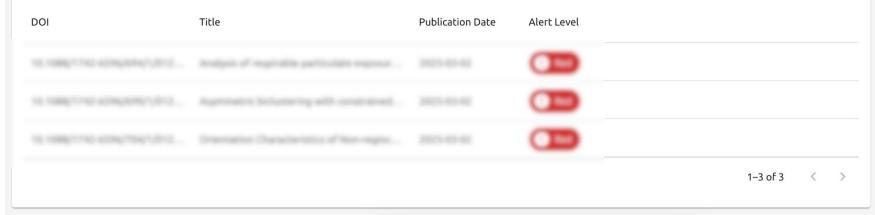




Contact Clear Skies to subscribe to detailed reporting with improved accuracy,

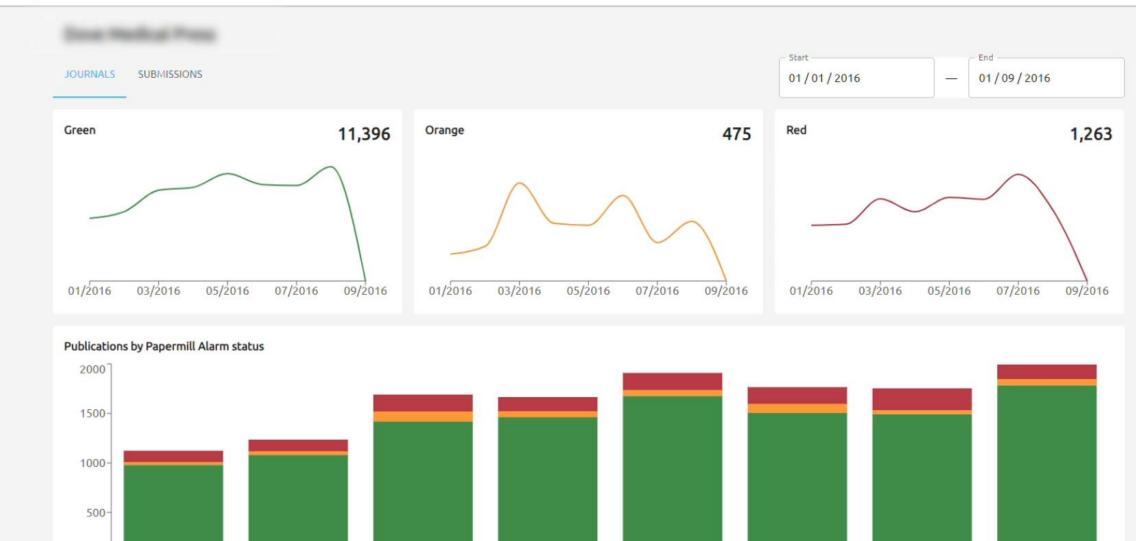












04/2016

■ Green ■ Orange ■ Red

05/2016

06/2016

07/2016

08/2016

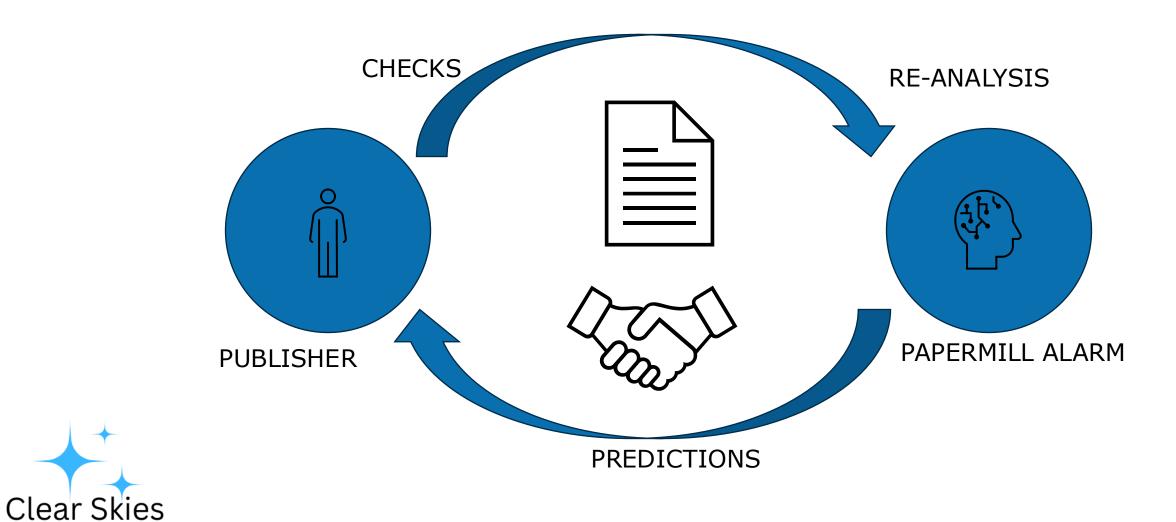
Journals

01/2016

02/2016

03/2016

An adaptive system



Oversight

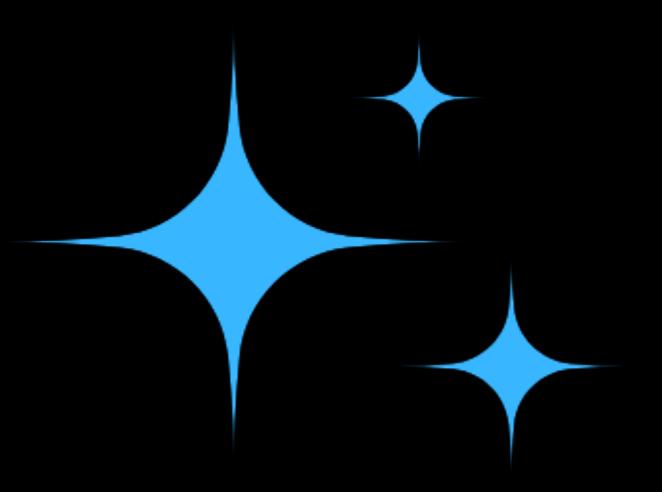
- Article level reports
 - All individual findings
- Journal-level reporting
- Publisher-level oversight
- Industry level oversight
 - Tracking and visualising every ISSN in OpenAlex



Thank you!

Contact us at:

https://clear-skies.co.uk





Open Discussion

Exploring AI in Publishing: Opportunities, Challenges, & Future Direction

Exploring AI in Publishing: Opportunities, Challenges, & Future Direction

- How can AI support researchers and publishers, and where might it fall short?
- What are your policies regarding the use of AI in both creating and reviewing journal articles?
- What level of transparency do you require around AI policies?
- How can submission systems facilitate this transparency?
- AI's Role in Maintaining Research Standards
 - Which areas of research integrity are best supported by AI tools today?
- Looking ahead, what role(s) do you see AI playing in STM publishing over the next 5-10 years?







50 High Street, Suite 21 North Andover, MA 01845 USA

www.ariessys.com

Thank You!