

From Draft to Publication: A Guide to Scientific Publishing

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Where to publish? How can I get my work noticed?

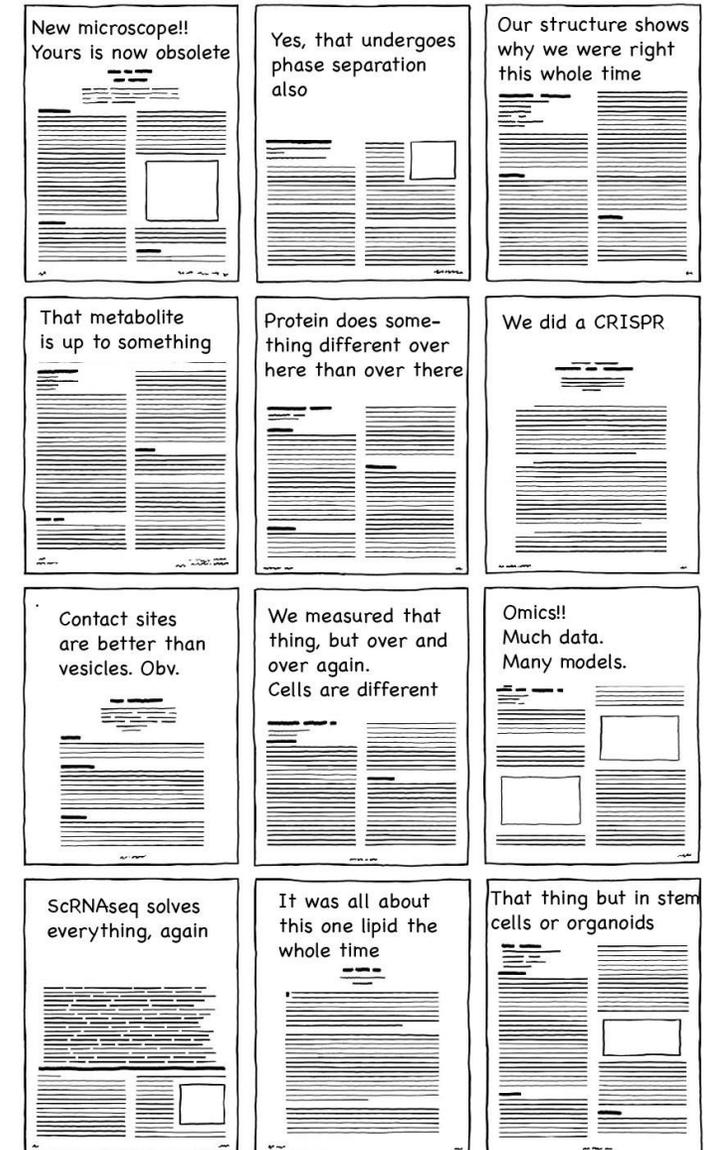
Ask yourself

- Who is the main audience and what journals do they read?
- Does my study move the field forward by a huge leap or does it address a longstanding quandary in the field?
- What other researchers working in different fields might be interested in my work?

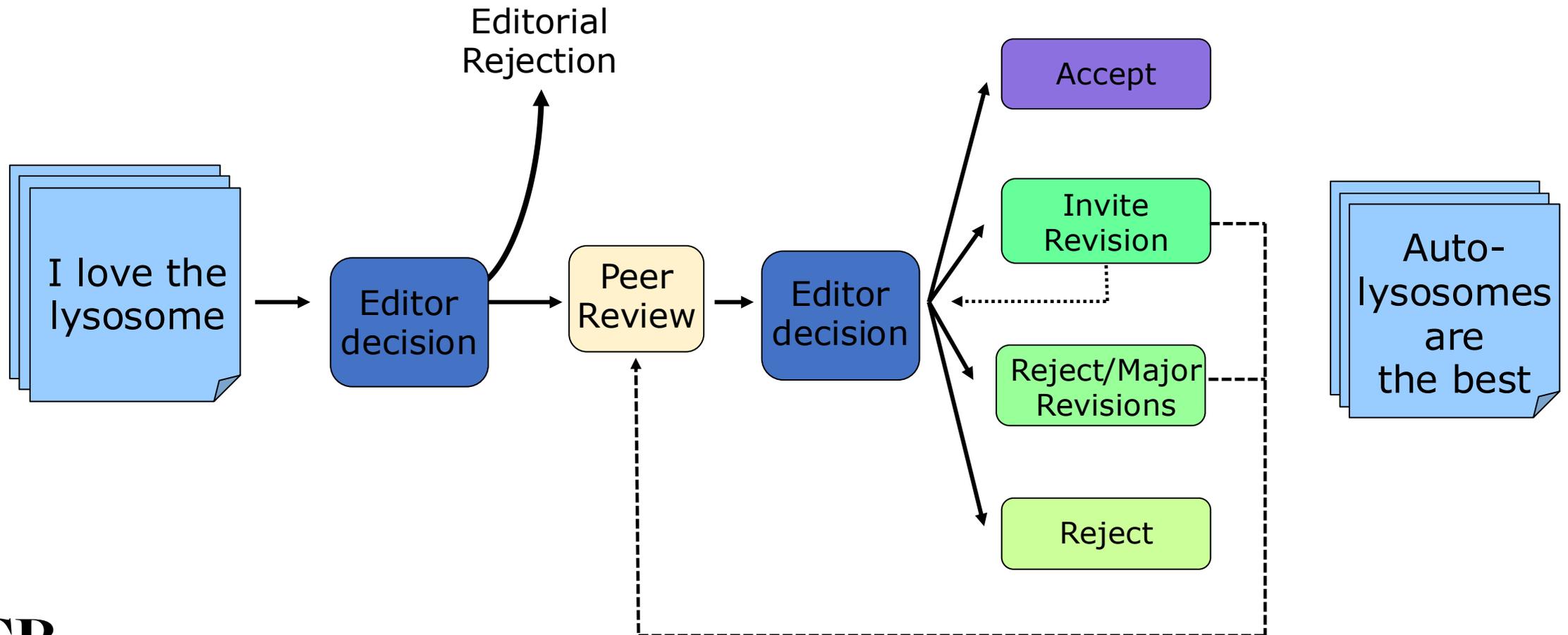
Journal selection

- Want your paper to be visible to the appropriate audience
- Reader will have confidence in your results and want to invest their time to read your study

TYPES OF CELL BIOLOGY PAPER



The Editorial Process



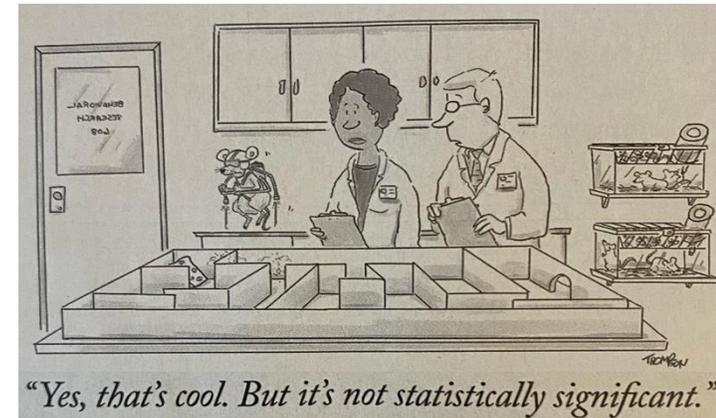
The Editorial Process

What are journal editors looking for?

- Conceptual advance
 - Does the study settle a long-standing debate or unresolved question?
 - Does the paper change the way scientists think about a question?
- Novelty of conclusions
- Strength of conclusions, alternatives ruled out?
- High quality data and technically sound experiments
- Relevance and generality of findings

Are the findings interesting for the journal readership?

***Frame your big picture question first,
what problem are you trying to solve?***



Submission and Review – Cover Letter

Cover letter is helpful to

- Suggest editors, mention any editorial communications
- Suggest reviewers, indicate their expertise
- Exclude referees, indicate why
- Explain any conflicts of interest
- Indicate related papers submitted or in press
- Illustrate why your study is interesting and highlight the novelty of your findings
- Discuss your work in relation to past advances, mention relevant past publications

***Cover letter should summarize and contextualize your findings,
convince the editor they are interesting and appropriate for the journal***

Editor
Nature Genetics
345 Park Avenue South, 10th Floor
New York, NY 10010-1707
USA

Dear Editor,

It is not clear why a cover letter is required except to fulfill the silly British preoccupation with letterhead and other emblems of status.

Please accept my correspondence.

Sincerely,

Submission and Review – Writing a Scientific Paper

Formatting

- Page numbers are essential, line numbers ideal
- Ensure figure numbers are on the figure
- Plan figure title and legend carefully and provide with the figure
- Provide quality high resolution figures
- Choose a clear font at an appropriate size
- Double check figure labels, content, callouts

"Airplane test"

How easy is reading a PDF of your paper on a laptop?

Writing a Scientific Paper – be precise and concise

- Avoid jargon and highly technical terms
- Use active voice
 - ‘the lysosome degrades proteins’, not ‘*proteins are degraded by the lysosome*’
- Clearly state cause and effect
 - ‘inhibits’, ‘activates’, not ‘*modulates*’, ‘*regulates*’
- Reduce propositions (*of, to*) and nominalization
 - ‘glioma cells migrate’, not ‘*migration OF glioma cells*’
 - ‘insulin resistance’ not ‘*resistance TO insulin*’
- Use a narrative flow, guide the reader
 - What is the question, why is it interesting
 - How does your data help, emphasize the bottom line of each experiment

Writing a Scientific Paper

Abstract

- Introductory sentences and background
- General problem being addressed, objective of the study
- Summary of main findings and conclusion
- Implications, general perspective

Introduction

- Provide sufficient background information and explanations
- Too many details gives the impression of a niche advance
- Get the reader excited about the problem your research will solve

Abstract Example

N-cadherin dynamically regulates pediatric glioma cell migration in complex environments

Dayoung Kim, James M Olson, and Jonathan A Cooper

<https://doi.org/10.1083/jcb.202401057>

Pediatric high-grade gliomas are highly invasive and essentially incurable. Glioma cells migrate between neurons and glia, along axon tracts, and through extracellular matrix surrounding blood vessels and underlying the pia. **Mechanisms that allow adaptation to such complex environments are poorly understood.** N-cadherin is highly expressed in pediatric gliomas and associated with shorter survival. We found that inter-cellular homotypic N-cadherin interactions differentially regulate glioma migration according to the microenvironment, stimulating migration on cultured neurons or astrocytes but inhibiting invasion into reconstituted or astrocyte-deposited extracellular matrix. N-cadherin localizes to filamentous connections between migrating leader cells but to epithelial-like junctions between followers. Leader cells have more surface and recycling N-cadherin, increased YAP1/TAZ signaling, and increased proliferation relative to followers. YAP1/TAZ signaling is dynamically regulated as leaders and followers change position, leading to altered N-cadherin levels and organization. **Together, the results suggest that pediatric glioma cells adapt to different microenvironments by regulating N-cadherin dynamics and cell-cell contacts.**

Writing a Scientific Paper

Results

- Subheading titles are the take home finding, not a question
- Begin each section with the question the experiments will address
- Provide a detailed explanation of the experiment
- Summarize the conclusion for each section – how did you solve the question?

Discussion

- Recap your discoveries and how they answer the questions
- Contextualize your findings with regards to the field
- Discuss caveats and future directions

***Questions about
writing a paper?***

Peer Review – Selecting Reviewers

We look for referees who are/have

- Technical expertise
- Broad knowledge of the field
- Familiar with the journal and its scope/caliber
- Efficient
- Fair and constructive
- Avoid obvious conflicts of interest

Why are referees anonymous?

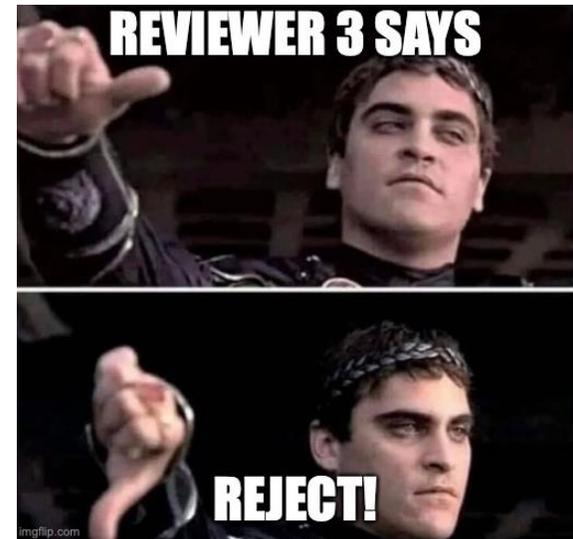
- Prevents unobjective reviews
- Reduces opportunities for favor trading
- Helps scientist stay friends
- Editors, not referees, take the ultimate responsibility for decisions

Authors can opt-in to publish editorial decisions and reviews

Peer Review – Editorial Decision

Provide authors clear guidance for revisions,
or explanation for rejection

- Editors make a decision based on arguments, not counting votes
- Editors decide what is essential for publication in that journal
 - Is data to support the current model needed?
 - Does the paper need to delve further into an aspect?
 - Are some points outside the scope of the current study?
- Editorial letter outlines essential points to address, things that are not required



Peer Review – Revision and Resubmission

We assess if the revised manuscript meets the criteria stipulated for publication

- Ensure all points are appropriately addressed with experimental data as required
- Summarize the main conceptual and experimental concerns, any editorial concerns, and how you have addressed these
- Provide a clear and concise specific response to all reviewer points
- Know when and how to argue with reviewers
- If the editor overruled a reviewer point include this in your response

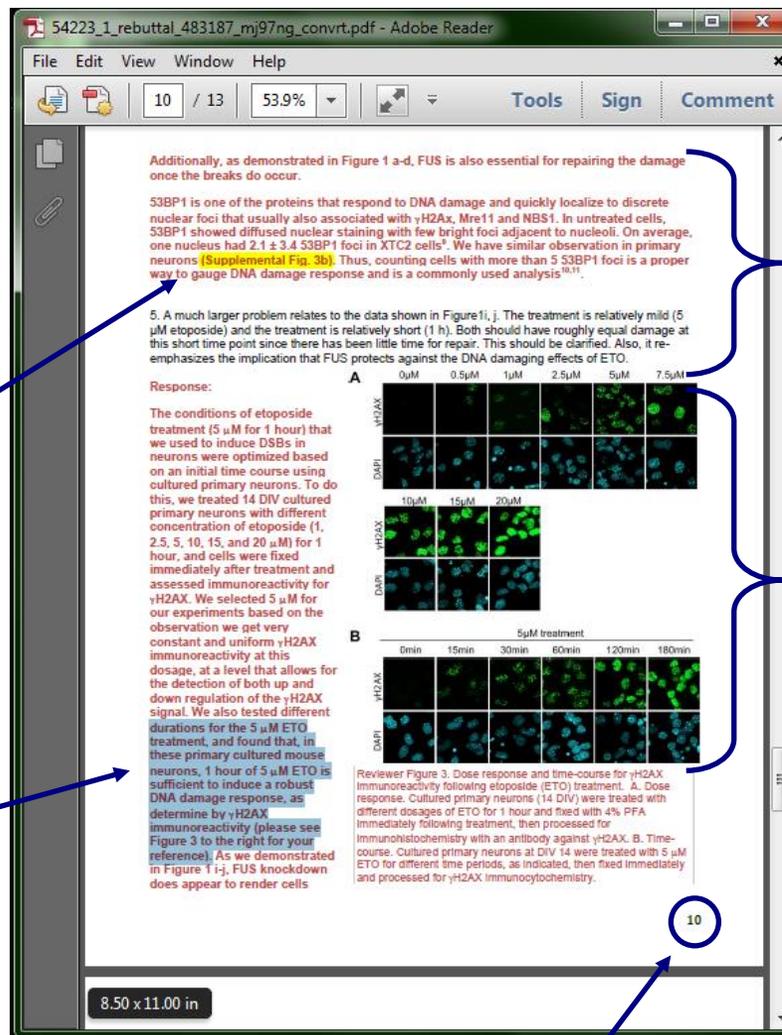
Questions or clarification needed? Contact the editor to discuss!

Anatomy of an efficient point-by-point rebuttal letter

Be specific and concise

Added figure is clearly referenced to the main manuscript

Text added to the main paper may be copy-and-pasted



Formatting is used for ease of viewing, clarity, and flow

Additional figures are embedded to the response letter

Page number is clearly noted

Peer Review – Challenging a Rejection

When is it advisable to appeal

- You feel strongly that the decision was based upon factual errors or a flawed interpretation of your findings
- You believe that you can completely address all criticisms with new data

When is it *not* advisable to appeal

- Rejections based on degree of conceptual advance are difficult to overturn

This paper certainly fits the scope of Science, given the highly novel and unexpected concept

Conceptually, this proposed model goes against almost everything we know

Peer Review – Successful appeal strategies

Making your case

- Note clearly and concisely the key components of your paper (novelty and importance)
- Provide a scientific argument for any disagreements or misunderstanding
- Substantiate your arguments with references and data if available

New data

- List any new data or planned experiments that would be included in the revised manuscript and the issue(s) specifically addressed

Don't

- Accuse the referees of being unfair, guesses at their identity, question the expertise of the referees, personal or professional attacks, 'endorsements' that so-and-so loves your paper, immediate escalation to the editor-in-chief, insult the handling editors

Rigor and Reproducibility

Detecting Fraud

- Plagiarism – software screens for similar text
- Image analysis – screen for duplications and evidence of manipulation
- Raw data – stored by authors and available upon request, published as supplemental information, available in repositories (FigShare, DRYAD, Zenodo)

Reporting

- Materials and methods – full experimental details, reagent information (concentration used, source, catalogue #, RRID) and validation (antibodies), equipment information
- Author information – ORCID iD, contact person
- Statistical information, sample size, replicates, randomization, blinding
- Ethical compliance for human and animal studies
- Data deposition – genetic, proteomic, structural, metabolomics, computational

Editorial Careers



My Journal to Deputy Editor

- BSc in Anatomy & Cell Biology, PhD in Neuroscience, McGill University, Montréal, Canada
- Post-doctoral fellow in Berlin, Germany
- Joined the Journal of Cell Biology as Scientific and Reviews Editor in 2016
- Promoted to Senior Editor in 2020
- Became Deputy Editor in 2024



Winter wonderland

Photo: Neale McDevitt



Rockefeller Campus aerial view, Rafael Viñoly Architects



Core tasks of a Scientific Editor

- Read and evaluate new manuscript submissions
- Lead discussions with the editorial team (and academic editor) to reach an initial decision
- Choose and assign peer reviewers
- Assess, synthesize, and discuss reviewer reports
- Make final decision and craft letters
- Check accepted manuscript pre-publication

What else do editors do?

- Commission Reviews, Perspectives, Previews etc
- Attend conferences and visit scientific institutions
- Coordinate special projects (collections, special issues)
- Organize meetings/symposia, give publishing seminars
- Choose cover and table of content images
- Write editorial and other content
- Developmental editing

Scientific editor as scientist

- Immersion in the cutting edge of primary scientific research
- Critical scientific thinking
- Networking with the scientific community
- Exposure to a broader number and range of topics

The scientific generalist –

exchanging depth of knowledge for breadth of knowledge

Scientific editor as ex-researcher

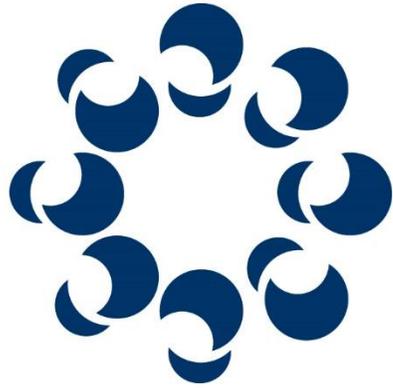
- Deadlines and schedules are comparatively short
- Generally shorter hours but more time-related pressure
- Less control over your workload
- Working environment more corporate and office-like
- Better work-life balance but more persistent deadlines
- Hybrid and remote working can be options
- Solo work with periods of intense networking

How most journal select editor

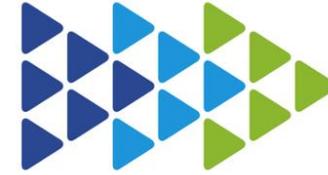
- Strong research background (PhD, most have post-doctoral experience)
- Breath of scientific interests
- Interest in science communication
- Enthusiasm for science and publishing
- Good ambassador for the journal
- Writing ability (clear communication)
- Manuscript test 'trial by fire'

Editorial career trajectories

- Promotion within the journal or company
- Switch journals/publishers
- Transition to the business arm of the company
- Work with funding agencies (governmental or private charities)
- Freelance science journalism or other media
- Pharmaceutical careers
- Science policy/government
- Academic administration



**Rockefeller
University
Press**



Life Science Alliance



JEM Journal of
Experimental
Medicine



JGP Journal of
General
Physiology



JCB Journal of
Cell Biology



JHI Journal of
Human Immunity