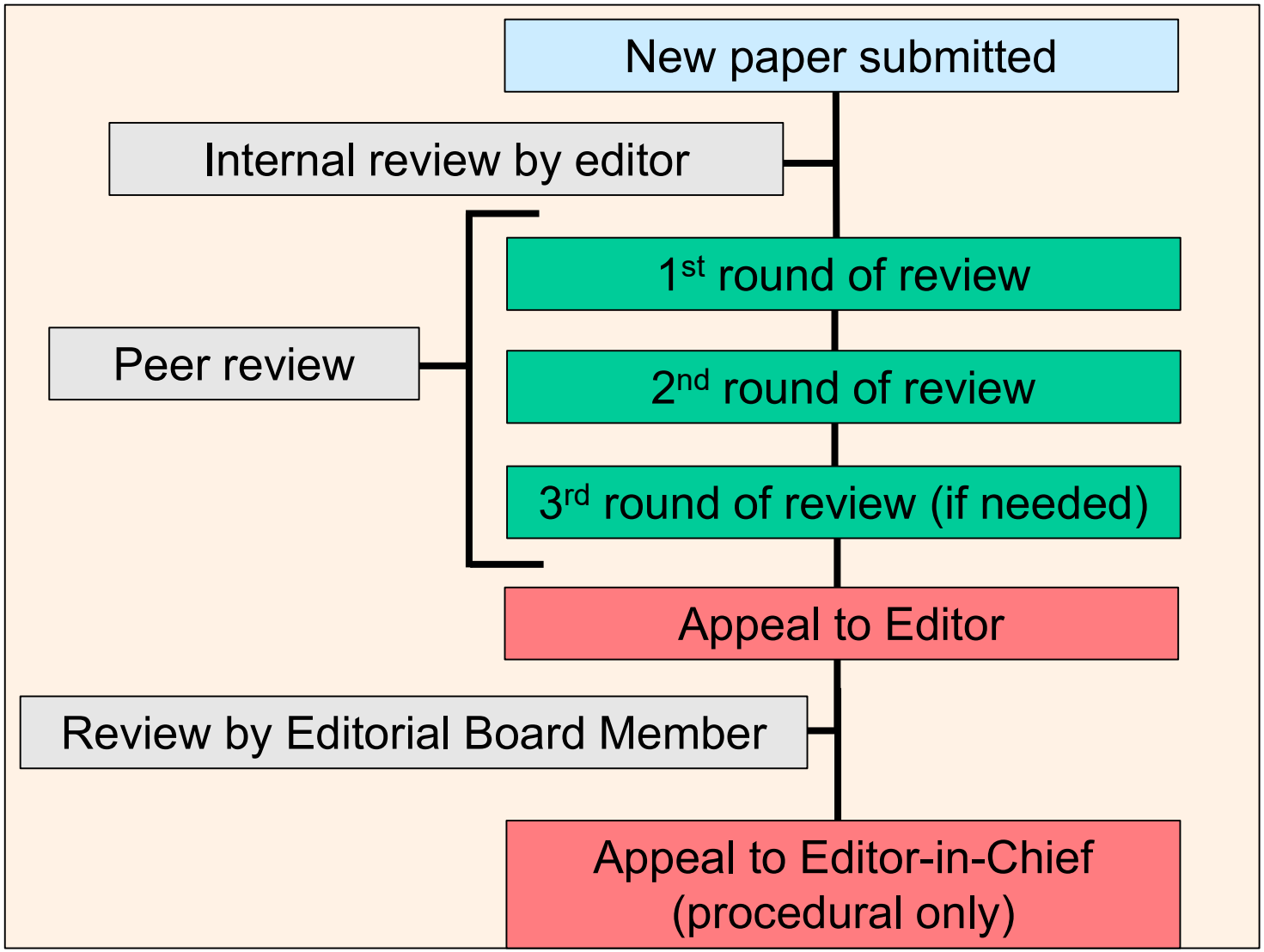
Scientific Publication Process and Writing Referee Reports

References:

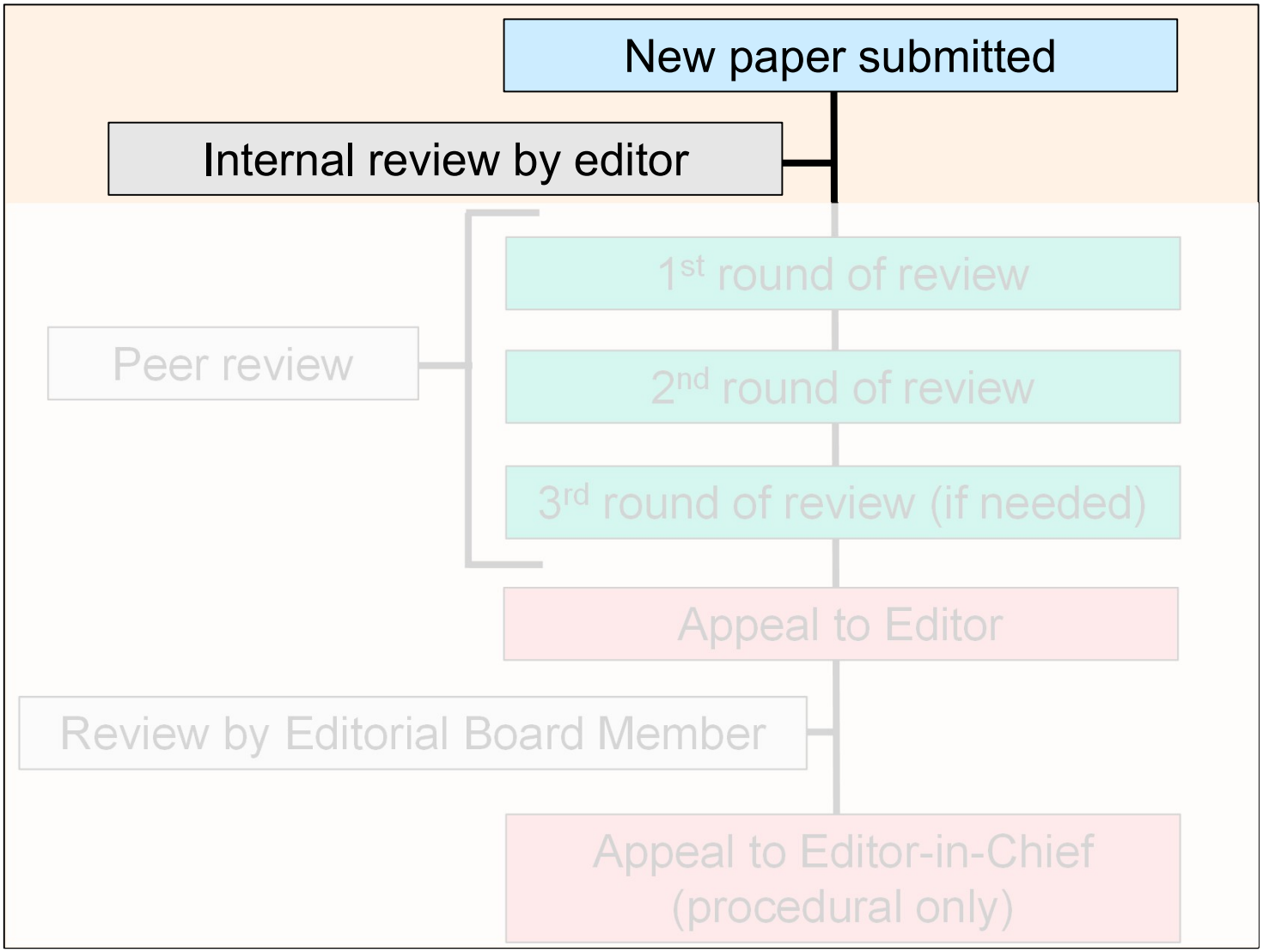
"How to reply to referees' comments when submitting manuscripts for publication", H.C. Williams, *J. Amer. Acad. Dermat.* **51**, 79 (2004).

"Peer review meets analytics," M. Antonoyiannakis, https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=2903

Summary of the *Physical Review* Review Process



The Internal Editorial Review Process



First, you will need to write a compelling cover letter to explain to the editor why your paper merits peer review

The Internal Editorial Review Process

What Is Internal Review?

-- Editors assess the paper and decide whether to send out to external referees or **Reject Without External Review**

-- If external review is needed, editors select the referees

-- Typically, the handling editors makes these decisions themselves; occasionally, they will consult editorial colleagues, an Editorial Board Member, or a trusted expert for a yes/no opinion on whether the paper merits external review

To see full lecture, go to:
https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=2903

Dr. Manolis Antonoyiannakis
Associate Editor, *Physical Review B*

The Internal Editorial Review Process

What Do Editors Look For to Make This Decision?

-- They typically focus on the ***abstract***, ***introduction***, and ***conclusions***

-- Is the quality of writing high?

-- Is the subject matter suitable for the journal?

-- What is the overall importance and quality of the paper?

-- What is the punchline of the paper, and is this punchline of interest to the journal's readership?

To see full lecture, go to:
https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=2903

Dr. Manolis Antonoyiannakis
Associate Editor, *Physical Review B*

Rejection Without External Review

How Do Editors Decide to Reject Without Review?

-- Paper is **too specialized**, a **marginal extension**, or **incremental advance**

-- Subject matter of paper doesn't match journal readership

-- Presentation is sloppy, writing is opaque

-- **The introduction:** lacks clarity, no context, describes prior work poorly, no broad picture, too many technical details, no motivation

-- **References:** too many old, specialized references, or self-references

-- **Conclusions:** no punch-line in the conclusions

What is the main message of the paper?

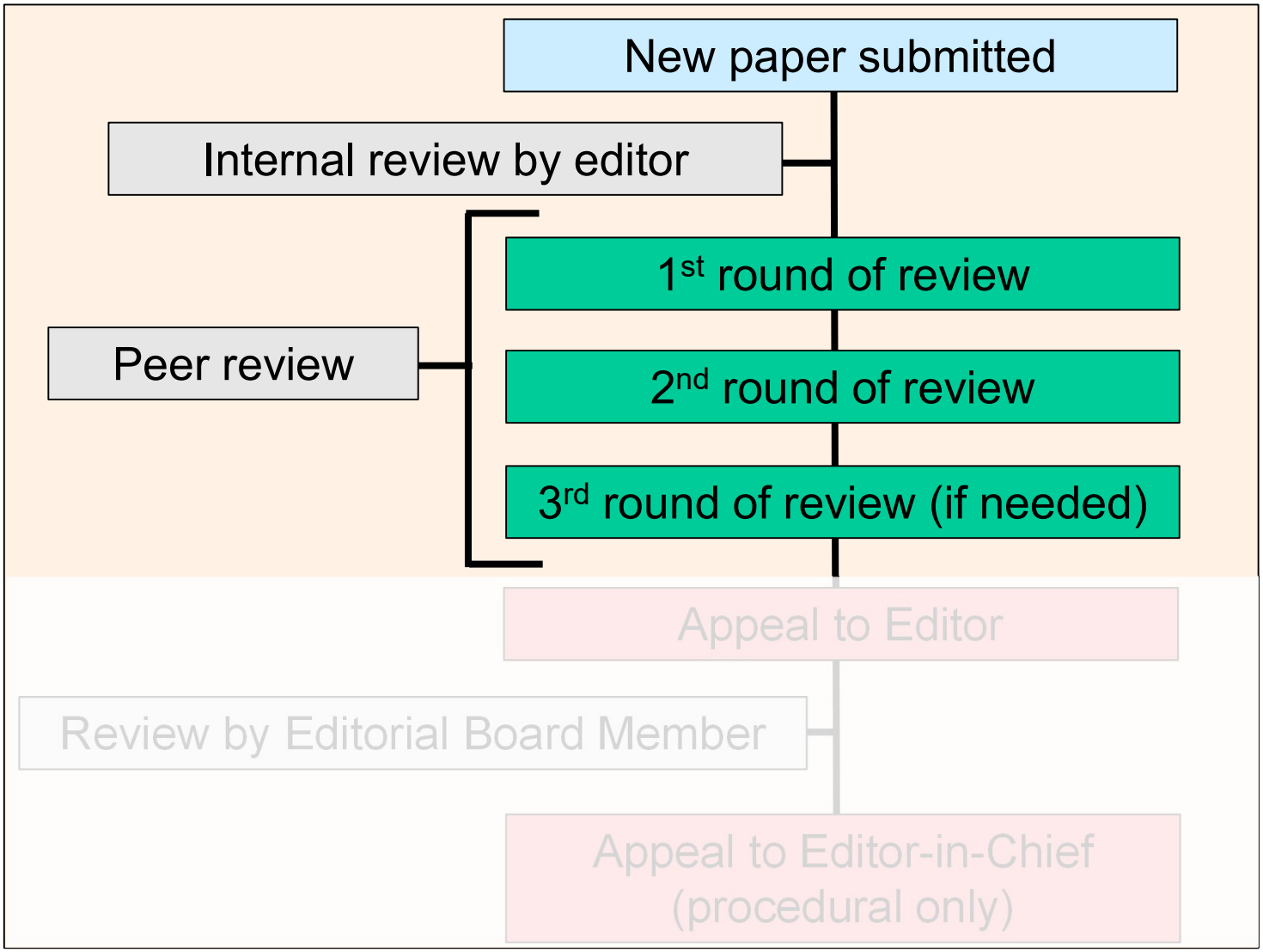
Why is the paper important?

How does the paper advance the field?

To see full lecture, go to:
https://ws.engr.illinois.edu/sitemanager/getfile.asp?id=2903

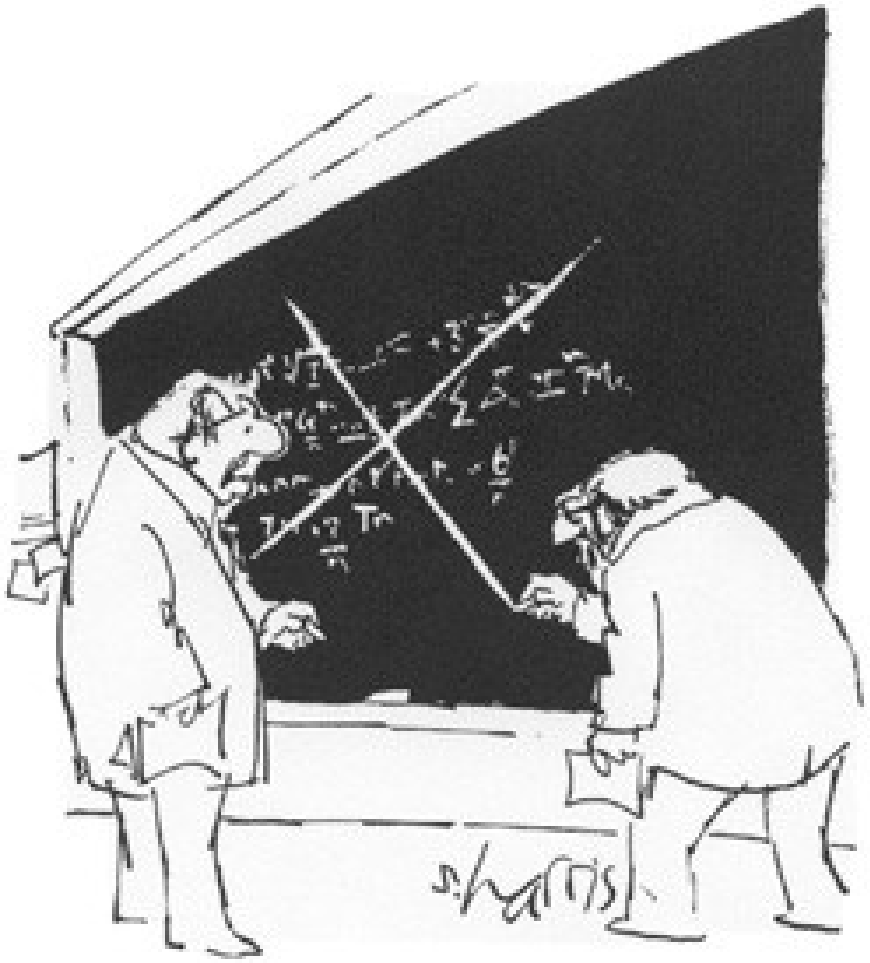
Dr. Manolis Antonoyiannakis
Associate Editor, *Physical Review B*

The External Review Process



If your paper passes editorial review, your paper will be sent out for anonymous “peer review”

The Refereeing Process in Science



That's *it*? That s peer review?"

A huge number of scientific articles are submitted daily

Most journals rely on impartial, external reviewers to help evaluate, and decide the fate of, submitted papers

This is generally performed as a service to the community, i.e., you don't generally get paid to referee papers!

How Will Your Paper Be Judged? *Physical Review Letters* Criteria

(1). Importance

(2). Broad interest

(3). Validity

(4). Accessibility

REFEREE RESPONSE FORM

(Please include this form with your full report)

Referee Please Note: This form is not a substitute for a full report

This form is to assist the Editors and is not a substitute for your written report. It may be useful, however, as an outline for your report, which should explain why the paper does, or does not, meet our criteria.

I. Letters published in PRL must meet a high standard of importance and interest.

a) Please judge the importance of the paper to its specific field.

not important ☐ ☐ ☐ ☐ ☐ very important

b) Please judge the broad interest of the paper, apart from its importance to its specific field, to a wide spectrum of physicists.

not interesting ☐ ☐ ☐ ☐ ☐ very interesting

c) Please judge the validity of the paper.

probably not valid ☐ ☐ ☐ ☐ ☐ probably valid

II. A Letter should have an introduction and conclusion that explains, in terms accessible to a broad audience, the physics context of the work: why it is important and what has been accomplished.

Please judge the introduction and conclusion.

not accessible ☐ ☐ ☐ ☐ ☐ very accessible

III. Recommendation:

NOTE: IF YOU ARE RECOMMENDING PUBLICATION IN PRL, PLEASE PROVIDE, IN YOUR REPORT, A SEPARATE STATEMENT AS TO WHY THIS PAPER IS APPROPRIATE SPECIFICALLY FOR PRL.

a) The paper should be published in PRL as it is. ☐

b) The paper should be published in PRL after minor revisions are made, without further review. ☐

c) The paper with revisions and further review, might be publishable in PRL. ☐

d) The paper with extensive revisions, and further review could possibly be published in PRL. ☐

e) The paper should not be published in PRL. ☐

IV. Would you be willing to review the paper again? ☐ yes ☐ no

If not could you suggest alternative referees?

The *Physical Review Letters* (PRL) Criteria

Validity - ***Is the work scientifically sound?*** If not, do you believe the paper can be revised to correct the scientific defects you find? Are the arguments made to draw the conclusions logically constructed and well-founded?

Importance - ***Does the manuscript report substantial research?*** Is the conclusion very important to the field to which it pertains? Is the research at the forefront of a rapidly changing field? Will the work have a significant impact on future research?

Broad interest - ***Papers are of broad interest*** if they ***report a substantial advance in a subfield*** of physics or if they ***have significant implications across subfield boundaries***. Is the paper of broad interest?

Accessibility – ***Is the paper written so that it is understandable by the broad PRL audience?*** Is there an introduction which indicates, to the interested non-specialist reader, the basic physics issues addressed, and the primary achievements? Are assumptions clearly presented? Is unnecessary jargon avoided? Do the title and abstract stand alone? Are tables and figures, if any, well used and effectively presented?

Refereeing vs. Reading Scientific Papers

When you read a journal article you are more likely to presume that the details of the experiment or calculation are correct, and that the research is original and significant (although you are likely to form your own impressions about this, of course!)

As a referee, your job is to carefully evaluate the originality and significance of the work, the validity of the experiments/calculation, and the reasonableness of the conclusions drawn

In other words, no presumptions should be made about the quality of the work when you're serving as a referee…you should read the paper with an open and critical mind

The Essential Components of a Good Referee Report

(1). Briefly summarize the main points of the paper

- to educate the editor
- to convince the editor and other referees that you've actually read the paper (not kidding!)

(2). Provide brief evaluations of the different criteria provided by the journal

These generally include:

(i) the quality/appropriateness of the methodologies and techniques used in the research

(ii) the quality of the logical arguments made to arrive at the key conclusions of the paper

(iii) the clarity of the presentation

The Essential Components of a Good Referee Report

(3). Provide a recommendation for or against publication

Your recommendation can be equivocal if you provide sufficient discussion of the pros and cons of publication

If you do recommend rejecting a paper, you can suggest alternate journals to which the paper might be more appropriately submitted

(4). List essential and suggested changes to the paper

This is an important component of a report even if you recommend rejecting the paper, as your suggestions might allow the paper to be published elsewhere, or even in the same journal after revision!

For More Guidance

For your future reference, the Institute of Physics has a great online resource on Introduction to Refereeing, that deals with all aspects of the refereeing process, including the Ethics of Refereeing!

IOP Guide: Introduction to Refereeing