How to Review a Paper for the Radiology Literature

AUR 2011 Annual Meeting – ACER Session on Manuscript Reviewing

Douglas S. Katz, M.D., F.A.C.R.

Vice Chair, Department of Radiology, Winthrop-University Hospital, Mineola, NY

Professor of Clinical Radiology, SUNY at Stony Brook

Consultant to the Editor/Conflict of Interest Deputy Editor, *Radiology*

Introduction

DISCLOSURES

- This presentation reflects my personal views and not necessarily those of the RSNA
- I have no other disclosures, financial or otherwise

Introduction

- *Peer review is a very important albeit very imperfect part of radiology publication*
- There is almost no formal training in manuscript preparation and reviewing during radiology training, and likewise for junior faculty – yet this is an expected skill in academic medicine
- Journal clubs do not necessarily emphasize radiologic journalism issues
- “Sink or swim” for junior academic radiologists - learn by trial & error, with a large learning curve

Introduction

- Bad habits – or no habits - are established
- The quality of reviews may be poor or suboptimal
- As a result scientific progress in imaging may suffer
- *It is a very rare if non-existent week where most or all of the manuscripts I review/edit have very closely followed all of the basic principles covered in this presentation*

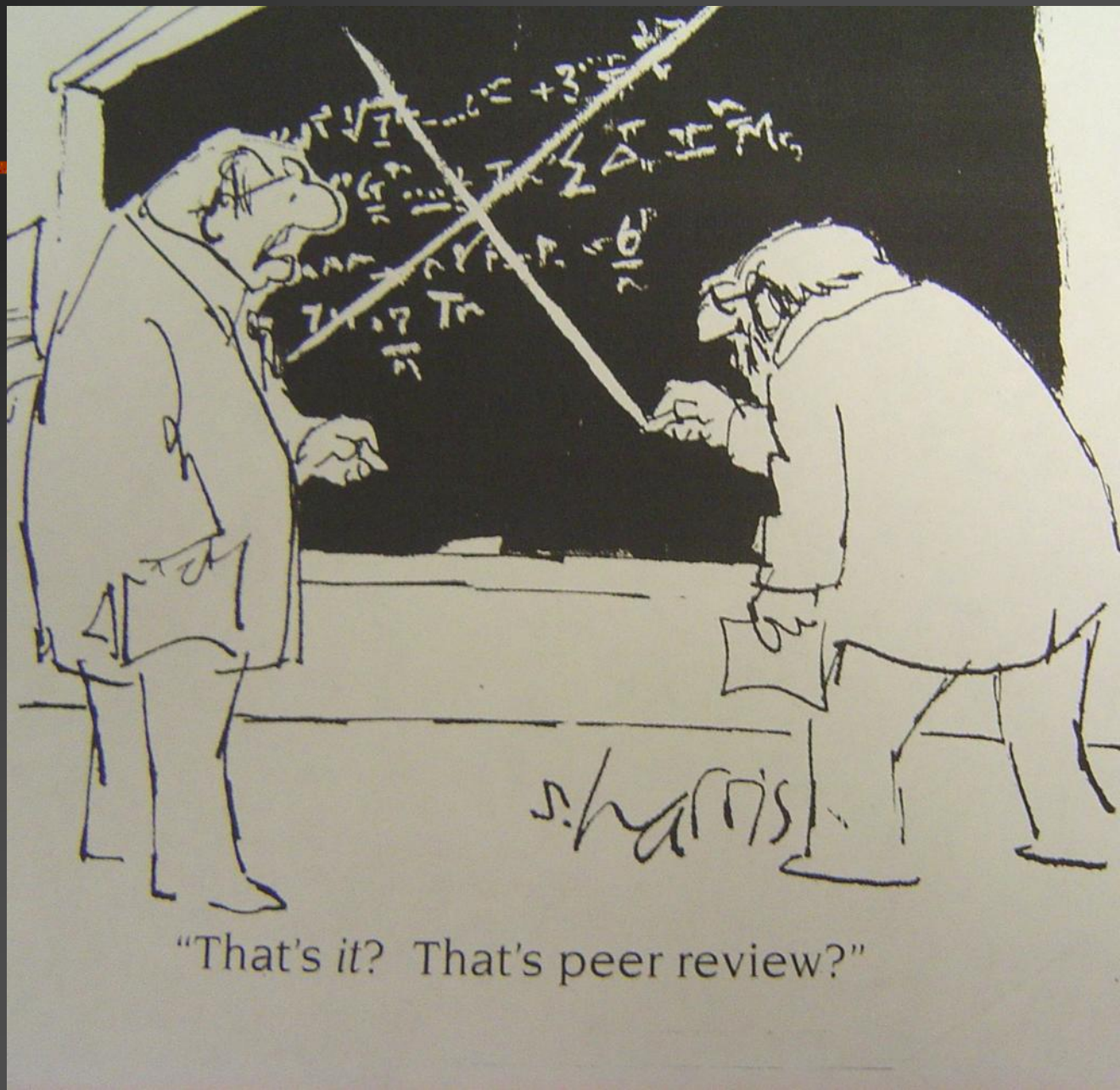
Objectives

- To briefly overview how to review a manuscript being considered for publication at an imaging journal
- To explain what editors want from a good review, and to point out potential reviewer pitfalls
- To understand how being a good reviewer also makes one a good reader and writer

Reviewing: the Bottom Line

- The **cardinal rule** of reviewing: ***does it pass the Dr. Stanley Siegelman "who cares" test?***
- Does the conclusions/main points of a clinical radiology manuscript reflect the reality/potential reality of your clinical practice?

Reviewing



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

Reviewing

- ***The most unheralded & unappreciated activity in academic medicine***
- Time consuming, painful, frustrating, and relatively unrewarded as an academic activity
- No one gets famous being a peer reviewer, and the reward is usually more work…
- However:
- - it can be personally fulfilling

Reviewing

- - it teaches one that *what is submitted does NOT EQUAL what is published*
- - great responsibility – accepted papers can lead to further research, change actual practice, establish standards of care, and be used in court
- - an opportunity to improve the quality of a journal and ultimately/hopefully, patient care
- - reviewer awards, inclusion on a journal's editorial board – *helpful for academic promotion*

Reviewing

- Volunteer by contacting a journal's editorial office
- *This includes radiology residents & fellows*
- Almost all imaging journals now have online manuscript submission and reviewing
- Checklist for areas of interest/expertise
- Email inquiry is periodically sent as to a reviewer's interest/availability; usually includes the manuscript's abstract
- The focus here will be on original clinical radiology research papers, but can extrapolate to other types of manuscripts

Reviewing

- Reviewers are chosen by the editorial offices of radiology journals using various means, but are [usually] not chosen by the authors
- 2 to 3 weeks allotted for the reviewer to complete the review
- Return review by email in a timely manner
- Usually 2-3 reviewers; deputy/additional reviews if conflicting reviews/delinquent reviews

Reviewing

- *A Reviewer has an ethical responsibility to disclose to the editorial office – and recuse herself/himself if:*
- - the reviewer feels she/he does not have adequate expertise to review the manuscript
- - the reviewer has a conflict of interest (personal/professional/financial)
- The major imaging journals now ask reviewers to disclose any such conflicts prospectively

Reviewing

- Review should be candid - identities of reviewers are blinded to authors at all major imaging journals - but fair; avoid insulting/hurtful comments
- Review should be in two parts: confidential comments to the editor, and comments to authors & the editor
- Comments to the authors should be numbered and grouped, with individual comments for each part of the paper (abstract, introduction, etc.)

Reviewing

Reviewing

- Too many reviews are non-substantive, non-constructive, or contain only a few sentences
- The authors put in a lot of work & so should you!
- The average review should take about 1.5-2 hours to do, & sometimes more
- Check if the authors followed the publication information to authors (PIA); **read PIA the first time you review for/write for a journal**
- Blatant disregard for the PIA usually indicates “recycling” of a paper rejected elsewhere

Reviewing

- Read the key articles cited in references, prior to reading the article under review, if you are not familiar with the specific topic
- Do an internet search and pull other relevant articles (from the imaging literature and general medical literature)
- *Participating in the peer review process is also an opportunity to broaden your own knowledge base and to gain expertise in new/focused areas*

Reviewing

- **Comments to the Editor:**
- - are kept confidential/are **NOT** given to authors
- - should include summary of the strengths and weaknesses of the paper
- - should note the most important changes which are needed
- - should make a specific recommendation to the editor regarding acceptance, rejection, or “under consideration”/reject with the opportunity to resubmit
- - most journals have a score-sheet to fill out

Reviewing

- **Comments to the Authors:**
- - make very specific points, comments, and suggestions on each part of manuscript
- - be constructive, not destructive
- - keep in mind the authors' viewpoint/frustrations of being a researcher/author; re-read the review and ask, "are these criticisms realistic and fair"?
- - complement the authors where appropriate

Reviewing – Specifics

- **Title:**
- - is the title appropriate for the study?
- - the title should not give the result: e.g. “Glucagon is Worthless for CT Colonography” but should state what was studied or note the main issue, e.g. “Comparison of CT Colonography with and without IV Glucagon” or “IV Glucagon: Should it be Used for Routine CT Colonography?”
- - a flawed title is a sign of a flawed paper
- - surprising how many problems occur with titles

Reviewing – Specifics

- **Abstract:**
- - is usually restricted to 300 words or fewer
- - should follow journal's format, typically purpose, materials and methods, results, and conclusion, if a major paper; abbreviated abstract if a technical development, etc.
- - the major statistical tests used should be stated in the end of the methods, and the results of statistical tests in the results section – along with p and other statistical values

Reviewing – Specifics

- **Abstract:**
- - *the reader should be able to grasp the main results/message of the paper by reading the abstract*
- - although some reviewers/editors prefer to read the abstract last – I prefer to read it first
- - should restrict contents only to most important information
- - results should follow directly from the methods
- - should include an IRB/informed consent statement

Reviewing – Specifics

- **Introduction:**
- - usually 1-2 typed pages
- - should justify the current study and briefly put it into the context of the previous literature
- - should reference other major papers that have previously addressed the topic(s) being researched
- - the last sentence should be nearly identical to the purpose statement in the abstract

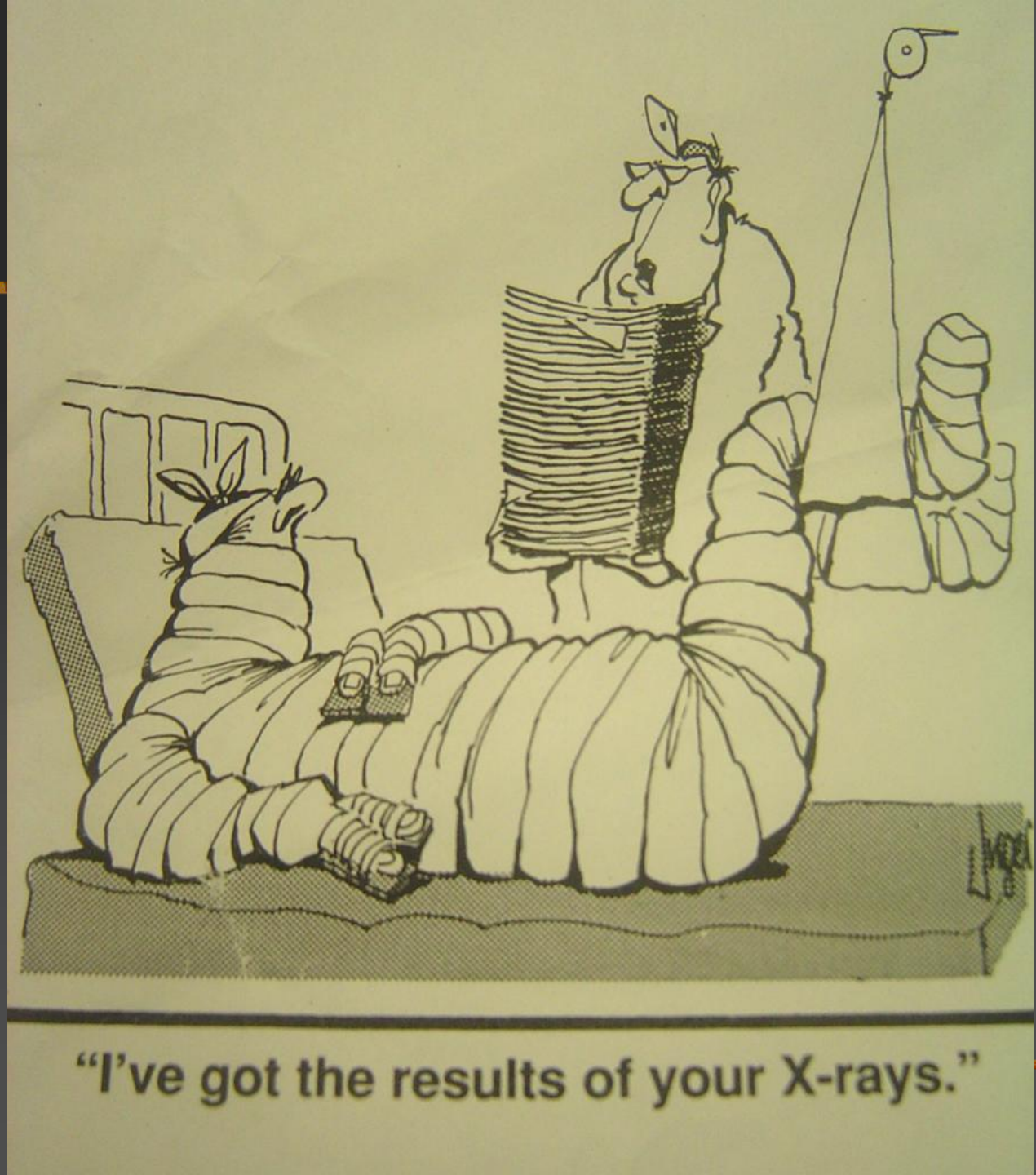
Reviewing – Specifics

- **Materials and Methods:**
- - organized with headers in a logical sequence; last section should be “statistical analysis”; 5 pages at most
- - equipment/pharmaceuticals used should be stated in appropriate detail
- - should include number of radiologists and others who performed each portion of the study and their years of experience
- - include an IRB & informed consent statement

Reviewing – Specifics

- **Materials and Methods:**
- - should state the age range and mean for both men and women in the study
- - should include details on region-of-interest (ROI) and other measurements (who performed, in generic terms)
- - watch for **EXACT** correspondence between the methods and the results – every result should be accounted for in the methods section
- - *the results section should not state any new methods*

Results



Reviewing – Specifics

- **Results:**
- - should follow directly from the methods section, again in logical sequence
- - tables used as appropriate, but main points should be included in text of the results section
- - all figures should be cited here – except for images of equipment or related to e.g. technique used in an interventional procedure; do not cite figures or tables in the discussion section
- - watch for statistical values, and comments regarding statistical significance

Reviewing – Specifics

- **Discussion:**
- - 4-5 pages
- - should not completely restate the results; only hit on the major points in the context of the previous literature
- - should explain the significance of the current study
- - should include a limitations section just before the conclusion paragraph; *no study is perfect*

Reviewing – Specifics

- **Discussion:**
- - should cite the most recent and relevant references; include ‘dissenting’ papers
- - should include a conclusion paragraph
- - *watch for overreaching conclusions*
- - should never use the words “obviously” or “importantly” anywhere in the manuscript
- - should not use the words “robust” and “novel” anywhere in the manuscript

Reviewing – Specifics

- **References:**
- - references should **FOLLOW THE FORMAT EXACTLY** for the appropriate journal
- - sloppy references/use of incorrect format reflects POORLY on the manuscript
- *- residents/fellows/junior authors – and most authors for that matter – never seem to get this*
- - use correct journal name abbreviations
- - avoid the use of too few or too many references

Figures

Budget ultrasound.

Reviewing – Specifics

- **Figures:**
- - can be a **substantial** problem, especially with internet submission
- - make sure image quality is high; use appropriate file format (e.g. TIFF, not JPEG)
- - figures should reflect the main points being made in the text; authors tend to show the exceptions rather than the most representative cases – or no images – or too many images
- - **annotate** figures with arrows/arrowheads

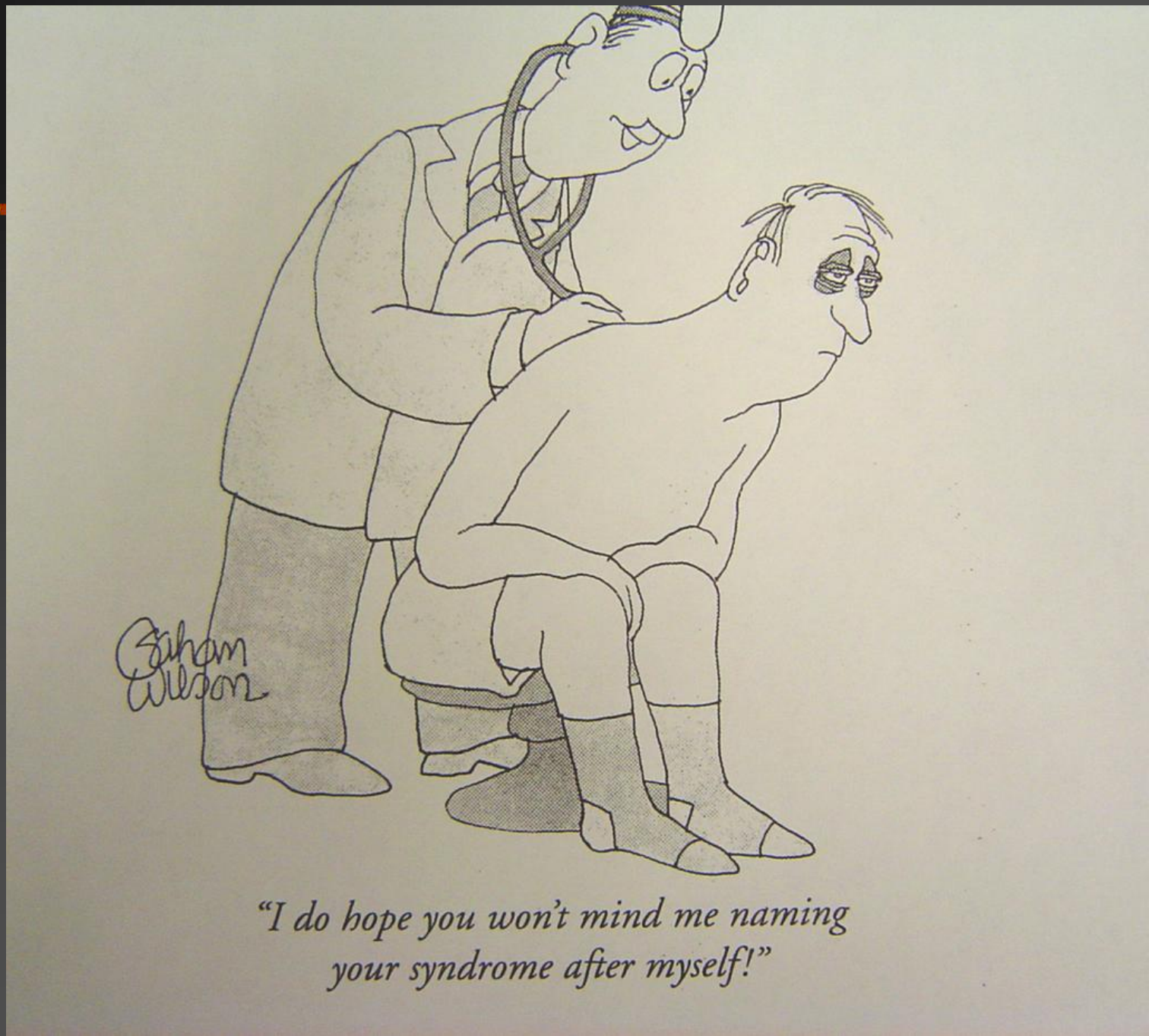
Reviewing – Specifics

- **Figures:**
- - figures should not reveal **specific** patient, institutional, or equipment manufacturer information
- - include **generic** (non-HIPAA-violating) patient information (age, sex, and clinical information) in the figure legends, if at all possible
- - follow journal format (**watch for the *AJR*** – for example “CT scan shows mass at head of pancreas (arrow)” – no “the”, “a”, etc. - no one seems to get this point, ever)

Reviewing – Specifics

- **Tables:**
- - authors should avoid excessive use of tables
- - should use appropriate font size for axes
- - should avoid confusing terminology; define abbreviations
- - summarize key point(s) being made, in legends
- - use standardized formats, e.g. for ROC curves; use examples in published articles as a guide

Writing


Graham Wilson
"I do hope you won't mind me naming your syndrome after myself!"

Reviewing/Writing

- Authors should “review” their own work prior to submission – approach it from the point of a critical reviewer – and remember there is no substitute for good editing/rewriting
- Use samples of the same type of article from the same journal as a model
- *Fix problems prior to initial submission to maximize chances for acceptance*
- Have an in-house “editor” who is not involved in the study, or the senior author, objectively critique and help re-write the manuscript prior to submission

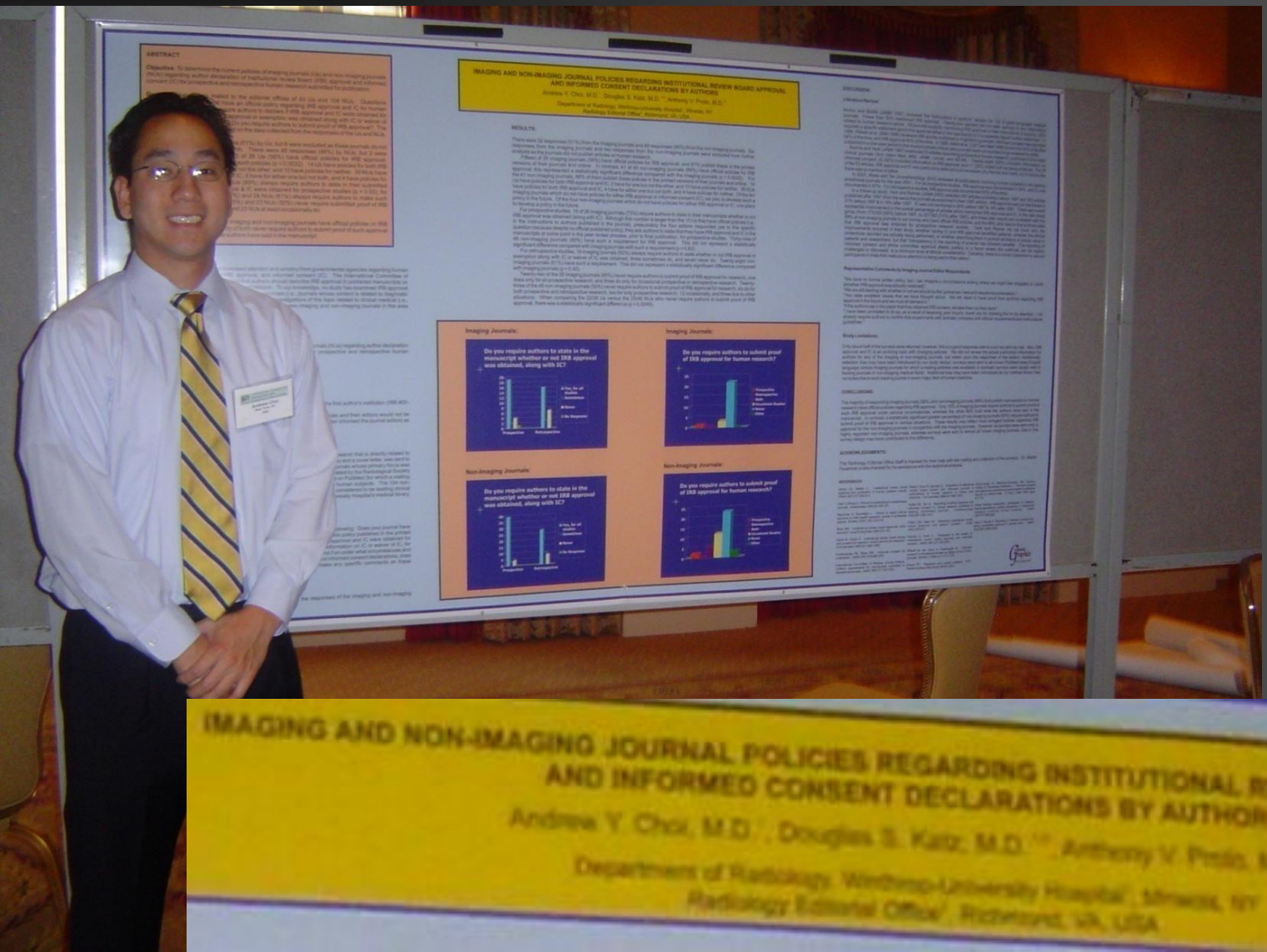
Revisions

- **Revisions to major papers are inevitable prior to final acceptance**
- For manuscripts which are placed “under consideration” or “reject but resubmit”, one or more of the original reviewers may be asked to evaluate the revision
- Manuscripts heading for acceptance at major imaging journals may undergo formal statistical review after initial peer review

Radiologic Journalism Fellowships

- RSNA Eyler Editorial Fellow
- RSNA Editorial Fellowship for Trainees
- Katz DS, et al. The RSNA Editorial Fellowship: editorial fellows' perspective. *Radiology* 2003;226:309-311
- RSNA reviewer mentorship program
- Figley Fellowship at the *AJR*

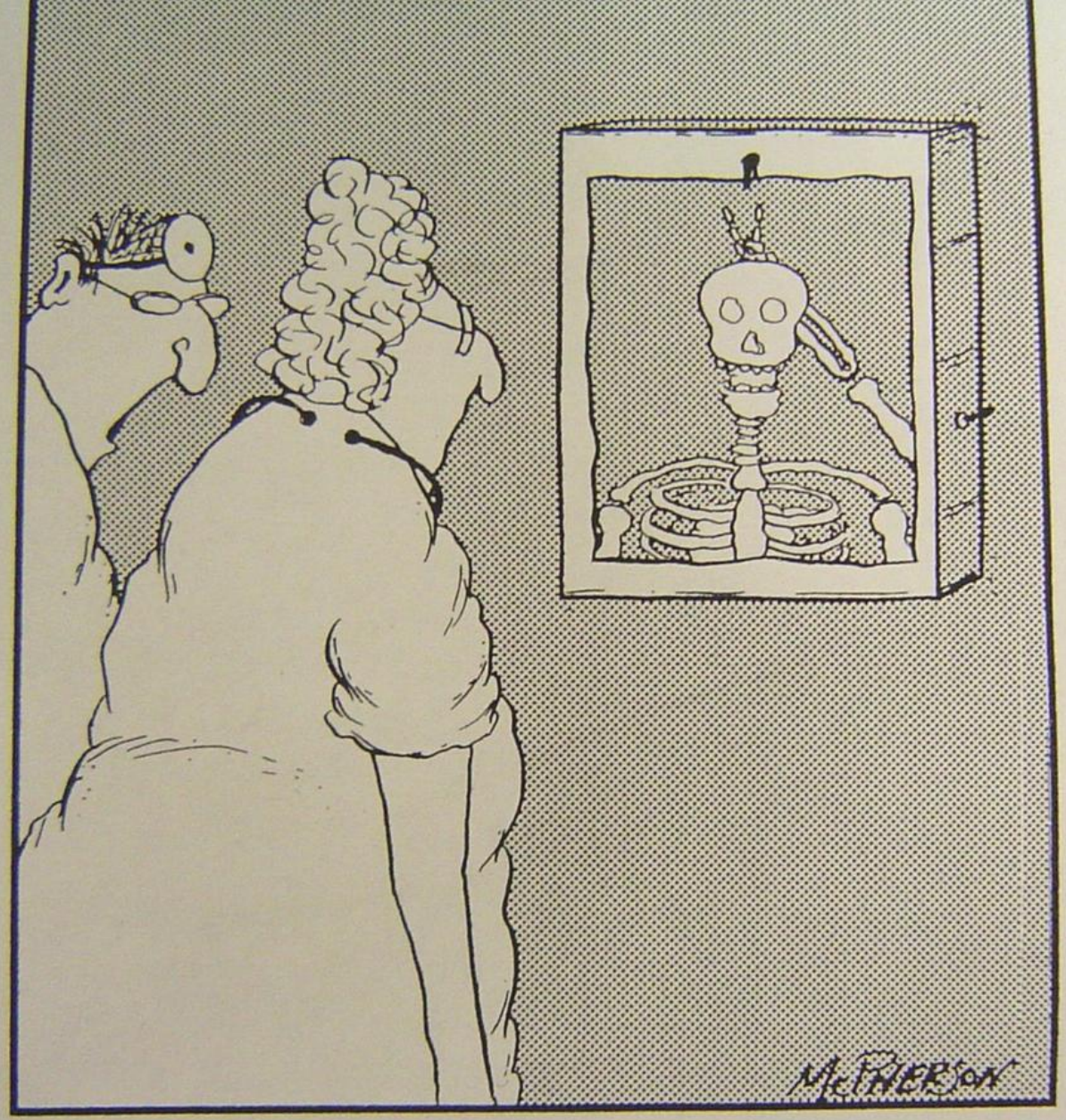
Research in Radiologic Journalism



Conclusions

- Involvement in the peer-review process will help the field of radiology, will improve your knowledge in specific as well as general areas, and will make you a more critical reviewer and a better writer
- Approach your writing as if a reviewer, and fix as many problems as possible, prior to manuscript submission
- Email: dkatz@winthrop.org

Conclusion



"Who's the wiseguy down in X-ray?"

References

- 1. Berk RN. Preparation of manuscripts for Radiology Journals: Advice to first-time authors. AJR 1992; 158: 203-208.
- 2. Siegelman SS. Advice to authors. Radiology 1988; 166: 278-280.
- 3. Proto AV. Reviewing for Radiology. Radiology 2000; 215: 619-621.
- 4. Publication information for authors. Radiology, RG, AJR, Academic Radiology, etc.
- 5. Provenzale JM, Stanley RJ. A systematic guide to reviewing a manuscript. AJR 2005;185:848-854.
- 6. Proto AV. Evaluating and processing your manuscript for publication. Radiology 2007; 244:3-6.
- 7. Proto AV. Reviewing for radiology. Radiology 2007; 244:7-11.
- 8. Sheiman RG. The RSNA reviewer mentorship program. Radiology 2007; 244:631-632.