Authorship and Peer Review:

CBI RCR Session
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Based on presentations by:
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According to the International Committee of Medical Journal Editors ...

“Authorship credit should be based on:

- **Substantial contributions** to conception and design, or acquisition of data, or analysis and interpretation of data;
- Drafting the article or revising it critically for important intellectual content; and
- Final approval of the version to be published.”

Authors must meet all three conditions!

http://www.icmje.org/#author
According to the International Committee of Medical Journal Editors …

- “Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.”

- “All persons designated as authors should qualify for authorship, and all those who qualify should be listed.”

- “Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.”

http://www.icmje.org/#author

A good time to discuss authorship is when starting a project - knowing it might change as the research proceeds.

Authorship is never guaranteed, it evolves with the project.

The worst time to discuss authorship is after the manuscript is complete.

The best time to discuss authorship policies is before a misunderstanding!
“Honorary” authorship is no honor!

Peer Review
Introduction

- The peer review of scientific manuscripts is a cornerstone of modern science and medicine.

- Peer reviewed journals rely on expert and objective review by knowledgeable researchers to ensure the quality of the papers they publish.

- The collective activities of the investigators who review manuscripts in a scientific discipline are critical to maintaining the standards of the journals and the field.

- The reviewers’ opinions on such matters as which techniques are current, valid and appropriate; how data should be analyzed and presented; and how rigorous must be or speculative authors can be in interpreting their data, become de facto standards of the field.

- Their critiques set subtler standards of collegiality, behavior, and ethics - not only through their recommendations concerning which papers should be published and which should be rejected, but also through the tone and wording of their reviews and through the thought that they give to their scientific and ethical responsibilities as reviewers.
The review of manuscripts raises many ethical issues and problems

• Reviewers should be aware of these
  ▪ When deciding whether to review a paper
  ▪ Throughout the review process
  ▪ After they submit their reviews

• The ethical issues can be vexing and complex.
• There may be no clear right or wrong pathway to follow.

To be a good reviewer, one must understand the peer review process and the role of the reviewer

• **Journal staff** – oversees the receipt of manuscripts, manages communications with authors and reviewers and processes accepted manuscripts for publication

• **Scientific editors** - make the final decision as to whether a specific manuscript will be accepted for publication, returned for revisions, or rejected

• **Members of the editorial board** – read and review papers, select reviewers and monitor quality of reviews, and recommend actions to editor

• **Reviewers** – provide reviews of manuscripts, make recommendations concerning publication
What do the editors look for in reviewers?

- Expertise in one or more areas of paper
- Objectivity
- No conflicts of interest
- Good judgment
- Able to think clearly and logically
- Able to write a good critique
  - Accurate
  - Readable
  - Helpful to editors and authors
- Reliable in returning reviews
- Able to do the review in the allotted time frame

Overview of review process
(considerable variation between journals)

- Potential reviewer contacted by journal
- Given authors, title, abstract, and time frame for review
- Reviewer agrees to review paper (or declines)
- Reviewer receives paper
- Reviewer performs review
- Reviewer submits review to editors
- Editors examine reviews, obtain additional reviews if needed, and make decision
- Decision goes to author, with comments from reviewers
- Reviewer thanked; may be informed of decision; may receive copy of comments sent to author
Content of reviews

• Review form
• Comments to editor
• Comments to authors
  ▪ General comments
  ▪ Specific recommendations
• Journal may ask specific questions to ensure that specific points are addressed

Reviews are generally blinded

• Reviewer’s identity is known to editors and journal staff
• Reviewer’s identity usually will not be released to authors
• Reviewer’s identity usually will not be released to third parties
• Intended to shield reviewers and allow them to provide critical and honest reviews
• No system is perfect - authors sometimes discover the identities of reviewers
From an editor’s point of view the ideal reviewer

- Is a researcher who is working in the same discipline as the subject of the paper yet is not in direct competition with the authors
- Will understand the hypotheses underlying the work
- Will be familiar with the model systems and methods used in the project
- Will be able to judge the quality of the data and analyses and assess the validity of the conclusions
- Will be able to assess the significance of the work

Questions to consider when deciding whether to review a paper

Do you have appropriate expertise?

- Ideal reviewers seldom exist
- Editors often send papers to multiple reviewers, with different areas of expertise and different perspectives
- Young reviewers tend to underestimate their expertise
- If in doubt, contact the editor and discuss your concerns
Is the work too close to your own?

• Example: paper contains experiments that overlap with those you are performing, planning, or preparing for publication
• Decline to review paper
  ▪ Conflict of interest precludes review
  ▪ There would be a danger of the appearance of misconduct, even if you acted ethically throughout the review process
• Make every effort to avoid receiving the full paper – if you receive it, return it immediately and discuss this problem with editor

Do you have any real or apparent conflicts of interest

• Institutional affiliations
  ▪ Through current institution
  ▪ Past institution (recent enough to have close associations)
  ▪ Future institution (e.g. negotiating for a position)
  ▪ Consultant to author’s institution
• Collaborators and colleagues
  ▪ How close?
  ▪ When?
• Other relationships with the authors
  ▪ Family
  ▪ Personal friends
  ▪ People you detest
  ▪ People you would be reluctant or afraid to give a harsh review to
Financial conflicts of interest

- These have recently received considerable attention
  - Scientific and medical community
  - Congress
  - Courts
  - Popular press
- Often involve a product or process owned or marketed by a for-profit entity
- Different agencies and journals have very different definitions for the level at which financial conflicts rise to a level where they are “significant”

Financial conflicts of interest can take many different forms

- Employment
- Consulting
- Stock and equity
- Fiduciary responsibilities
- Patent and license agreements
- Research support
  - Direct funding of research, gifts, provision of reagents or drugs without cost
Conflicts of interest can extend beyond the potential reviewer

- Employment, income, and investments of spouse, partner, or dependent children

- Institutional conflicts of interest
  - University
  - Department
  - Laboratory group

Conflicts of interest extend beyond interactions with the specific company whose product is studied

- Relationship with another company that could benefit or be harmed
- Involvement in testing or development of a competing product or technology
- Working relationship with a group of companies producing similar agents
- Adversarial relationship with company or group of companies – e.g. vocal opponents of smoking and tobacco companies
Other conflicts of interest

• Strong personal beliefs – in papers related to emotionally charged areas such as stem cells, abortion, or evolution
• Participation in heated scientific debates in the area of the paper or with the authors
• Other scientific conflicts of interest
  ▪ Studies so closely related to your own that you are in competition with the authors
  ▪ Labs/groups with ongoing real or apparent competitions in a general area of research

A final word on conflicts of interest

• While it might seem that science would be best served by completely avoiding all potential conflicts of interest during the peer review process, rigorous implementation of this standard would also have negative effects.
• It could, for example, preclude all those who have been involved in preclinical studies or clinical trials with a new agent from reviewing future papers on that agent.
• Similarly, it could preclude those who have deep experience using an existing drug to treat a disease from reviewing papers reporting on new compounds being developed to treat the same disease.
• Journals and reviewers therefore must strive to ensure that both appropriate expertise and appropriate objectivity are brought to the review process.
Do you have the time to review the article within the time requested by the editor?

- Reviewing manuscripts take times. Most reviewers estimate that they spend 1-2 hours on a typical manuscript review. Some reviews prove difficult and require much longer.
- The time frame to finish the review is often short.
- Reviewing is an unfunded, largely unrewarded task – and it comes on top of the reviewer’s other responsibilities.
- Researchers perform reviews because they are good citizens of the scientific community.
- Even the most conscientious scientist will have times when he or she is simply unable to take on an additional task.
- In such cases the invited reviewer should decline to review.

By agreeing to review a paper, the reviewer contracts to become a consultant to the journal and to adhere to the journal’s policies and guidelines for the review of manuscripts

- The reviewer agrees to provide a review that meets the needs and standards of the journal within in the time specified.
- The reviewer also incurs responsibility for setting the standards of the field of study.
- The reviewer must be able to judge fairly and objectively the quality and significance of the work under review.
- The reviewer is obligated to support and encourage publication of work of high quality while appropriately challenging flawed work.
- Before agreeing to review a paper, the reviewer should consider her/his ability to meet these standards.
Issues to consider once you have received the full paper

• Does seeing the full paper change your ability to review it?
  ▪ Content different from that described in abstract
  ▪ Hidden conflicts of interest

Again the basic rule of thumb is to contact the editor as soon as possible to discuss and resolve such problems.

How do you handle the paper?

• Manuscripts under review are confidential documents.
• They contain unpublished data and ideas, which must be kept confidential.
• You cannot share the paper or its contents with your colleagues.
• Manuscripts should be kept in a secure place, where they will not be readily accessible to the curious or unscrupulous.
Remember:

- You cannot use the information in the paper in your own research or cite it in your own publications.

- This can raise serious ethical issues if the work provides insights or data that could benefit your own thinking and studies.

Confidentiality is critical

- Not only the paper, but also the outcome and content of the review are confidential.

- Lapses in the confidentiality undermine the review process, betray the trust of the authors and the editors, and can create serious problems for everyone involved in the reviews.
Can you pass the paper on to someone else to review?

- Only with the permission of the editor
- Permission sometimes granted in cover letter; if not, the editor should be contacted in advance
- The reviewer initially contacted should always let the editor know that the manuscript has been given to another reviewer
  - Important for journal records
  - Journal staff may need to configure web portal for the new reviewer
  - Allows actual reviewer to receive credit for his/her efforts

It is important that young researchers receive appropriate credit for their reviews.

- Allows them to develop a track record in the peer review process
- Adds the new reviewers to the journal’s database, facilitating future invitations to review papers
- Builds the reviewers’ professional network – they become known to editors
- Increases reviewers’ visibility - journals list and thank reviewers in journal and on journal and society websites
- Journal editors are often ask to recommend committee members, speakers, and study section members and to comment on promotions
- A solid track record of performance in the peer review process will enhance the visibility of a young investigator and enhance the development of his/her career
Some ethical issues to consider as you read and review the paper

• Can you contact the author about the work or the paper?
  ▪ No – this destroys the blinding of the review process
  ▪ If you need information from the author, contact the journal staff, and they will contact the author

Can you seek help with your review?

• In some cases, simple questions can be asked without compromising the confidentiality of the review process.
• Before going beyond such anonymized questions, the reviewer should contact the editor.
• The consultation becomes part of a confidential process.
  ▪ The consultation should be made with appropriate discretion.
  ▪ The consultant becomes committed to handling the paper and its contents in confidence.
• The review should note in the comments to the editor that the consultant has seen the paper.
You are the agent of the journal, not the friend of the author

- New reviewers often empathize with the authors of the manuscripts they review.
- It is sometimes difficult to adopt a more institutional perspective and to realize that the reviewer’s primary role is to advise the journal, not to help the author publish the paper.
- A reviewer may feel bad about rejecting a paper and empathize with the authors, but she/he must be able to make a recommendation for rejection when it is the appropriate one.

A seriously flawed paper must be challenged

The reviewer must remember that it is unethical to allow a badly flawed paper to pass unchallenged into the peer reviewed literature, where it will be a trap to the unsophisticated reader who will read the manuscript (or perhaps only the abstract) superficially and will simply accept the flawed conclusions at face value.
Articles in peer reviewed journals are trusted by readers who would be skeptical of claims made in non peer reviewed sources

- The peer review process is viewed by scientists and the public as providing a scientific stamp of approval to the paper and its contents.

- The reviewer therefore has an ethical obligation to support work of high quality while appropriately challenging flawed papers.

Reviewers must be wary of unconscious biases

- Positive results are viewed as more exciting than negative results and are therefore more likely to be published
  - Bias toward a benefit from a experimental drug in a clinical trial
  - Bias toward finding a toxic effect associated with an environmental pollutant

- Papers that challenge existing dogma or that present surprising findings may be dismissed too readily during the review process
  - Bias against surprising new ideas
  - Bias against very novel techniques
The journal needs your scientific expertise, not your editorial assistance

- Journals rely on their reviewers to evaluate the quality, importance, and novelty of the science presented in the manuscript.
- Editors frequently receive reviews that focus completely on minor editorial problems (typographical errors, misspellings) and do not comment on the science in the paper.
- Such reviews have limited value as they do not advise the editor on the importance and validity of the science and do not help the editor to make an informed decision concerning publication.

Some editorial comments are appropriate

- There are cases where reviewer should make editorial comments.
- He/she should identify sentences or paragraphs where the wording is sufficiently erroneous or ambiguous that the science is unclear.
- She/he should also point out editorial errors that result in scientific misstatements.
- He/she should point out errors in referencing.
- A note that a manuscript requires major editorial assistance or a warning that a manuscript is so carelessly prepared that the science cannot be rigorously reviewed is always in order.
- Reviewers should not waste inordinate amounts of time correcting minor problems with spelling, grammar, or punctuation.
Focus on the science

• The review should focus on the science: the appropriateness of the techniques, the strengths and weaknesses of the experimental design, the quality of the data and analyses, and the appropriateness and impact of the conclusions drawn by the authors.

• The comments made in the review should present clearly the reviewer’s analysis of the quality, novelty, and importance of the science and the effectiveness and appropriateness of its presentation in the manuscript.

The reviewer should consider the appropriateness of the paper for the journal

• Some journals want articles of wide general interest, written so that they can be understood and appreciated by scientists in other fields.

• A specialty journal will be interested in a much narrower range of subjects and will publish some highly specialized papers written for experts in a narrow area.

• A paper presenting solid science and having high potential impact therefore may be unsuitable for publication in a specific journal simply because of the mismatch between the journal and the paper.
The reviewer must also consider whether the paper meets the standards of the journal

- The journal generally will provide some guidance on points the journal considers critical, and may ask some specific questions on the review form.
- Some journals set a higher standard than others.
- Some require more (and others want less) detail in the papers they publish.
- The reviewer must consider the scientific focus, readership, standards and policies of the journal as he/she reviews the paper.

The reviewer is generally asked to consider and comment on a variety of issues, including

- The importance and novelty of the work
- The appropriateness of the materials, methods and experimental model systems
- The rigor of the experimental design (including the inclusion of appropriate controls)
- The quality of the data
- The appropriateness of the statistical analyses
- The rigor of the interpretation of the data
- The value of the discussion of the data
- The validity of the conclusions drawn in the paper
The reviewer may also be asked to comment on

- The length of the paper
- The writing quality
- The clarity, accuracy, and completeness of the figures and tables
- The accuracy and adequacy of the introduction which frames the area of the research, of the discussions of prior and related work, and of the citations to the literature

During the review a reviewer may discover ethical issues which must be considered and addressed

These are often minor problems, which simply require additional information.

E.g. the protocols for a study with human subjects seem appropriate, but the methods make no statement that the study had been reviewed by an IRB. Addition of information on the IRB review may be all that is needed.
More serious ethical concerns may arise

- Concerns about the ethics of studies using animals
- Concerns about the ethics of studies using human subjects
- Undisclosed conflicts of interest on the part of the authors
- Failure to acknowledge or consider related literature or data that conflict with the authors’ findings or viewpoint

Duplicative publication or plagiarism

- The reviewer may recognize much or all of the paper, because some or all of the paper has been published previously by the same authors.

- The reviewer may find text or ideas which have been copied without permission or appropriate attribution from the works of others.
Concern about the integrity of the data, analyses, and conclusions

- The reviewer may feel that the data cannot possibly be correct as presented and may suspect that some data have been fabricated or falsified.
- The reviewer may feel that the experiments are sound, but that data have been selected for presentation, manipulated or analyzed inappropriately, so that the conclusions drawn from them are deliberately misleading.

Instances of possible misconduct require thought and wisdom on the part of the reviewer and the editor

- On one hand, the reviewer and editor must take all appropriate steps to preclude publication of duplicate, plagiarized or fraudulent papers.
- On the other hand, the mere suspicion of scientific misconduct can have a devastating impact on a scientific career, even if deliberate malevolence is eventually disproved.
Writing the review

• Reviews can be difficult to write.
• They must be clear, concise, and accurate.
• Although their primary purpose is to advise the editor, comments to the author frequently are of value in guiding revision of the paper for the same or a different journal and in suggesting ways to improve the project by the inclusion of additional data or experiments.
• Comments to the author may be very brief, especially in the case of an excellent, well prepared paper.
• They may be extensive if the reviewer feels the paper has valuable elements but requires extensive revisions to present the findings effectively.

• The reviewer should remember that the review will be sent to the authors and that it should be written in a constructive and collegial tone.
• The content should be constructive and informative.
• Comments and recommendations should be clear and should be supported with citations to specific areas in the text of the paper.
• When the reviewer’s criticisms rely on or are supported by data in the literature, the reviewer should provide citations to the relevant papers.
• A good review should help the authors to think more clearly about their work and its design, execution, presentation, and significance.
Rude reviews

• Some reviewers submit critiques that are so rude, snide, sarcastic, argumentative, or even obscene that they must be censored before being sent to the authors.
• Some are not transmitted, depriving the author of any beneficial insights the reviewer might have had.
• Rudeness, personal criticism and locker room humor are never appropriate.
• Even the most serious scientific criticisms can be worded and presented in such a way as to be constructive and collegial.
• Reviewers should write critiques using a style and tone that they would want to see in the reviews that they or their trainees receive.
• Reviewers should remember that they are setting the standards of behavior and collegiality for their field, as well as the standards of science.

After the review

• When the review is finished, it is sent to the journal
• The reviewer should keep a copy of the review until he/she is certain that the review has been received by the journal and that the editor has no questions. This review should be kept confidential until it can be destroyed.
• The reviewer will probably have a paper copy of the manuscript. This and all working notes should be destroyed in a way that ensures confidentiality.
• The need for confidentiality continues even after the review is complete. Both the contents of the paper and the outcome of the review remain confidential.
Conclusions

• The review of manuscripts for peer reviewed journals raises many ethical issues and problems.
• Reviewers should be aware of these when deciding whether to review a paper, throughout the review process, and even after they submit their reviews.
• Forethought and planning will enable the reviewer to avoid many potential ethical problems.
• Others ethical problems may appear without warning.
• When in doubt about ethical issues, the reviewer should discuss his/her concerns with the editor or the journal staff.
• The reviewer should always work to provide reviews that meet high standards of ethics as well as high standards of science.

Things you don’t want to read in the critique of your manuscript:

• This paper is desperate. Please reject it completely and then block the author’s email ID so they can’t use the online system in future.
• It is sad to see so much enthusiasm and effort go into analyzing a dataset that is just not big enough.
• The biggest problem with this manuscript, which has nearly sucked the will to live out of me, is the terrible writing style.
• Reject – More holes than my grandad’s string vest!
• The writing and data presentation are so bad that I had to leave work and go home early and then spend time to wonder what life is about.

Common Grant Application Criticisms

• Little explanation of the importance of the experiments
• Hypotheses supported only by circumstantial evidence
  • Figures are poor in quality
• What constitutes normal controls is not mentioned
• The conclusion drawn from the preliminary data does not support the hypothesis
• The experiments are directed largely by techniques, without critical analysis of advantages and pitfalls of each technique
• The Experimental Design does not provide information about actual design of the experiments
• The application is difficult to read
• The revised proposal has not addressed prior criticisms

http://www.youtube.com/watch?v=lAOGrjtOpMg

Questionable Writing Practices

• Only reading the abstract of a paper.
• Citing work that you don’t understand.
  • Relying solely on reviews.
• Not giving credit to co-workers for their intellectual input.
• Using only the literature that supports your view.
  • “Honorary” authorship.
• “Self-plagiarism” is an irresponsible research practice that can have serious consequences.
Guidelines for Avoiding Plagiarism

• “In your own words!”
  • Compare with content and intent of the authors.
• Give credit to the words and ideas of others - regardless of whether it is verbatim, paraphrased or summarized.
• Use quotation marks when it is absolutely necessary to state verbatim what an author has written.
• Cite the complete reference - authors, title, journal/book, page numbers and year.
  • “Common knowledge” is audience dependent.
  • If in doubt of a copyright issue contact the owner.

http://facpub.stjohns.edu/~roigm/plagiarism

PRACTICE, PRACTICE, PRACTICE!

• Take notes at every talk you attend - no “paper” crutch!
• Always take notes in your own words when you read a paper (your words reflect your understanding).
  • Learn the terminology of your discipline.
  • Establish good “pre-writing” habits.
• Practice summarizing the writing of others often.
• Do a critical comparison with the original text - verify with your advisor/mentor - or use a “plagiarism detection” program, e.g.
  http://facpub.stjohns.edu/~roigm/macro.html
  • When in doubt - ask.
  • Imitate style not content!
• Use the Writing Center at UD and on-line resources
Some problems

- Means different things at different journals
- Slow
- Expensive
- Subjective
- Biased
- Open to abuse
- Poor at detecting errors
- Almost useless at detecting fraud

Is peer review reliable?
(How often do two reviewers agree?)

NEJM (Ingelfinger F 1974)
- Rates of agreement only “moderately better than chance” (Kappa = 0.26)
- Agreement greater for rejection than acceptance

Grant review
- Cole et al, 1981 – real vs sham panel, agreed on 75% of decisions
- Hodgson C, 1997 – two real panels reviewing the same grants, 73% agreement

Are two reviewers enough?
- Fletcher and Fletcher 1999 – need at least six reviewers, all favouring rejection or acceptance, to yield a stats significant conclusion (p<0.05)
Should we mind if reviewers don’t agree?

- Very high reliability might mean that all reviewers think the same
- Reviewers may be chosen for differing positions or areas of expertise
- Peer review decisions are like diagnostic tests: false positives and false negatives are inevitable (Kassirer and Campion, 1994)

Bias

Author-related
- Prestige (author/institution)
- Gender
- Where they live and work

Paper-related
- Positive results
- English language
Prestigious institution bias

Peters and Ceci, 1982

Resubmitted 12 altered articles to psychology journals that had already published them

Changed:
• title/abstract/introduction - only slightly
• authors’ names
• name of institution, from prestigious to unknown fictitious name (eg. “Tri-Valley Center for Human Potential”)

Peters and Ceci - results

• Three articles recognised as resubmissions
• One accepted
• Eight rejected (all because of poor study design, inadequate statistical analysis, or poor quality: none on grounds of lack of originality)
How easy is it to hide authors’ identity?

• Not easy

• In RCTs of blinded peer review, reviewers correctly identified author or institution in 24-50% of cases

Reviewers identified (open review) – results of RCTs

Asking reviewers to sign their reports in RCTs made no difference to the quality of reviews or recommendations made

• Godlee et al, 1998
• van Rooyen et al, 1998
• van Rooyen et al, 1999
What makes a good reviewer? – results of RCTs

• Aged under 40
• Good institution
• Methodological training (statistics)

What might improve the quality of reviews?

• Reward/credit/acknowledgement?
• Careful selection?
• Training?
• Greater accountability (open review on web)?
• Interaction between author and reviewer (real-time open review)?