Writing for Publication
Responsible Authorship
Peer Review

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What are common principles linking these topics?

- Accurate and complete representation of data
- Interpretation/opinion delineated from ‘fact’
- Credit given to work/contributions of others
- Privileged information treated as such

- *All can intersect with issues of misconduct and plagiarism (next session)*

Communication

One of the most essential skills a scientist can have, and **written communication** is especially important because it can serve as a permanent record of your work.

Spending a little time planning before you start writing will save you time and make your document more effective, whether it's a proposal, a paper, or a report.

http://cen.acs.org/articles/93/i1/Write-Right.html

Writing for Publication
Why do we publish? – I

- Documentation of research/scholarship in a field
- Meta-analyses and refinement of models require accessible and archival records- particularly important in the world of "BIG DATA"
- The scientific method rests on testing hypotheses and verification/refutation of previous results
- *Archival media and methods of dissemination evolving rapidly*

Writing for Publication
Why do we publish? – II

- Necessary activity for the advancement of a field
  - Defining critical problems/questions
  - Highlighting significance and ramifications
  - Public forum for critical debates, including challenges to widely accepted views

Writing for Publication

Framework and Dilemmas

- When is material ready for publication?
- Who decides?
- How is credit/authorship apportioned?

Writing for Publication
Decision on readiness

- Who decides when work is ready to be published?
  - You
  - Graduate adviser
  - Collaborators

- Strategies for resolving disagreements

Communication
WHO IS YOUR AUDIENCE?

- Who will read this document?
- Who are the major stakeholders, interested parties, or decision-makers?
- How much do they know about this topic, and what is their technical background? Is there a secondary audience?

Writing for Publication

When and how to publish

- When is material ready for publication?
  - Importance
  - Reproducibility
  - Pressures to publish
- How to organize materials?
  - 'Minimum publishable unit'
    - Likely citation impact
  - One paper or more
- Where to submit?
  - Peer-reviewed
    - Journal status
  - Non-refereed contributions

Communication

WHAT ARE YOU TRYING TO TELL YOUR AUDIENCE?

- Does your audience need to know the entire picture or only the details on a specific section?
- Is your goal to inform or to persuade? Do you need to present both sides, or can you advocate for one position?
- Do you need to include scientific data, budget analyses, workforce projections, safety analyses, workflow improvements, or other information?
- What else will your audience need to make a decision?

Communication
WHERE SHOULD YOU SUBMIT IT?

- Selecting the right medium and format for your document is crucial because it will affect your credibility.

- Is what you're trying to communicate more appropriate as a tweet or an article in the *Journal of the American Chemical Society*, for example?

- Do you need to write a formal report with references, or will a bulleted list of key points in an e-mail work better?

Writing for Publication

When and how to publish

One journal at a time

Policy Summary on Prior Publication

The *Journal of the American Chemical Society* considers for publication only original work that has not been previously published and is not under consideration for publication elsewhere. When submitting a manuscript, an author should inform the editor of any prior dissemination of the content in print or electronic format. This includes electronic posting of conference presentations, posters, and preprints on institutional repositories and any other Web sites. Any content that has been made publicly available, either in print or electronic format, and that contains a significant amount of new information, if made part of a submitted manuscript, may jeopardize the originality of the submission and may preclude consideration for publication. For further details, see the Author Guidelines [PDF].

http://pubs.acs.org/page/jacsat/submission/prior.html

{Red highlight added}

Communication
WHEN DO THEY NEED TO KNOW?

- Do you need to send something quick and dirty so your audience is aware of the issue as soon as possible?

- Or do you need to wait until all data are documented and confirmed (for example, a New Drug Application for the U.S. Food & Drug Administration)?

  It might be a good idea to have a preliminary conversation to prepare your audience and identify areas of concern.

- Is there a deadline for the report, and is it fixed or flexible?

- Is there any advantage to publishing the information early?

Communication
WHY SHOULD THEY CARE?

- Although the issue may be of supreme importance to you, you need to know why it's important to your audience and to craft your document accordingly.

- It should be clear to your audience what result you want and by when.
- Do you want feedback, permission to start, or a budget and staff?
- What will you do if you don't get an answer? One idea is to include an "ask" such as, "If I do not hear from you by Jan. 15, I will proceed with option B." If you still can't get an answer, can you at least find out when you will receive an answer?

Writing for Publication
Criteria for Publication

- Broad guidelines defined by professional societies and by individual journals (Instructions to Authors)
- Common attributes
  - Originality
  - Impact
- Specifics
  - Field
  - Focus (theoretical, technical, experimental)

But much variation in practice even within a field

Writing for Publication
Nature

'The criteria for publication of scientific papers (Articles and Letters) in *Nature* are that they:

- report original scientific research (the main results and conclusions must not have been published or submitted elsewhere)
- are of outstanding scientific importance
- reach a conclusion of interest to an interdisciplinary readership

Further editorial criteria may be applicable for different kinds of papers

(http://www.nature.com/nature/authors/get_published/index.html)

Writing for Publication
Nature-2

- **large dataset papers:** should aim to either report a fully comprehensive dataset, defined by complete and extensive validation, or provide significant technical advance or scientific insight.

- **technical papers:** papers that make solely technical advances will be considered in cases where the technique reported will have significant impacts on communities of fellow researchers.

- **therapeutic papers:** In the absence of novel mechanistic insight, therapeutic papers will be considered if the therapeutic effect reported will provide significant impact on an important disease.'

Writing for Publication

Physical Review B-general

‘It is the policy of the American Physical Society that the *Physical Review* accept for publication those manuscripts that **significantly advance physics** and have been found to be **scientifically sound, important to the field, and in satisfactory form**.

The Society will implement this policy as fairly and efficiently as possible and without regard to national boundaries.’

http://prb.aps.org/info/polprocb.html

Writing for Publication
American Political Science Review

- ‘The *American Political Science Review* (*APSR*) publishes scholarly research of **exceptional merit**, focusing on important issues and demonstrating the **highest standards of excellence** in conceptualization, exposition, methodology, and craftsmanship.’

http://www.apsanet.org/content_43805.cfm

Writing for Publication
American Political Science Review-2

• ‘The *APSR* publishes original work. Submissions should not include tables, figures, or substantial amounts of text **that already have been published** or are forthcoming in other places.

•Neither does the *APSR* consider submissions that are currently under review at other journals or that duplicate or overlap with parts of larger manuscripts submitted to other publishers (whether of books, printed periodicals, or online journals).’

http://www.apsanet.org/content_43805.cfm

Writing for Publication
PLOS ONE Publication Criteria

- The study presents the results of primary scientific research.
- Results reported have not been published elsewhere.
- Experiments, statistics, and other analyses are performed to a high technical standard and are described in sufficient detail.
- Conclusions are presented in an appropriate fashion and are supported by the data.
- The article is presented in an intelligible fashion and is written in standard English.
- The research meets all applicable standards for the ethics of experimentation and research integrity.
- The article adheres to appropriate reporting guidelines and community standards for data availability.

http://www.plosone.org/static/publication

Writing for Publication

Proceedings of the Modern Language Association

‘PMLA welcomes essays of interest to those concerned with the study of language and literature. <*snip*> The ideal PMLA essay exemplifies **the best of its kind**, whatever the kind; addresses **a significant problem**; draws out clearly the implications of its findings; and engages the attention of its audience through a concise, readable presentation.

The MLA urges its contributors to be sensitive to the social implications of language and to seek wording free of discriminatory overtones.’

http://www.mla.org/pmla_submitting>

Writing for Publication

Avoiding and Resolving Disputes

- **Senior Author and Order of Authorship –**

The senior author is generally defined as the person who leads a study and makes a major contribution to the work. All the authors at the outset of a project should establish senior authorship, preferably in a written memorandum of understanding. This memorandum of understanding should reference the authors' agreement to abide by their departments' policy on authorship or this University default policy on authorship.

At the outset of the study the Senior Author should discuss the outline of work and a tentative Order of Authorship with the study participants. As projects proceed, agreements regarding authorship may need to be changed. It is the responsibility of the senior author to assure that the contributions of study participants are properly recognized.

Material derived from http://rio.msu.edu/authorshipguidelines.htm

Writing for Publication

Avoiding and Resolving Disputes-2

- **Disputes Over Authorship –**

Disagreements over authorship, e.g. who has a right to be an author or the order of authorship, should be resolved by the Senior Author in collegial consultation with the other authors. When this process cannot reach resolution, the Senior Author should arrange with his or her chairperson for arbitration by a knowledgeable and disinterested third party acceptable to all the authors. If the authors cannot agree on a mutually acceptable arbitrator, then the Vice President for Research and Graduate Studies shall appoint an arbitrator. During the arbitration process all the authors are expected to refrain from unilateral actions that may damage the authorship interests and rights of the other authors.

Material derived from http://rio.msu.edu/authorshipguidelines.htm

Writing for Publication
Authorship and credit

- How is credit/authorship apportioned?
  - Within group
  - Collaborators
- Minimum requirements stated by most journals for authorship
  - Increasingly, some require explicit statements on contributions of authors

Writing for Publication

Authorship and credit

- Authorship credit should be based on

1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;
2) drafting the article or revising it critically for important intellectual content; and
3) final approval of the version to be published.

- Authors should meet conditions 1, 2, and 3.

http://www.councilscienceeditors.org/editorial_policies/whitepaper/2-2_authorship.cfm#2.2.1 Based on information from the International Committee of Medical Journal Editors (http://www.icmje.org/ethical_1author.html)

Writing for Publication

Authorship and credit-2

When a large, multi-center group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript. These individuals should fully meet the criteria for authorship defined above.

Journals will generally list other members of the group in the Acknowledgments.

- Acquisition of funding, collection of data, or general supervision of the research group, alone, does not constitute 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.councilscienceeditors.org/editorial_policies/whitepaper/2-2_authorship.cfm#2.2.1 Based on information from the International Committee of Medical Journal Editors (http://www.icmje.org/ethical_1author.html)

27

Writing for Publication

Author-ineligible categories

- **Guest authorship-**

Guest authorship has been defined as authorship based solely on an expectation that inclusion of a particular name will improve the chances that the study will be published or increase the perceived status of the publication. The "guest" author makes no discernible contributions to the study, so this person meets none of the criteria for authorship.

Writing for Publication

Author-ineligible categories-2

- **Honorary or gift authorship-**

Honorary or gift authorship has been defined as authorship based solely on a tenuous affiliation with a study. A salient example would be "authorship" based on one's position as the head of a department in which the study took place

Writing for Publication

Nature **409**, 860-921 (15 February 2001)

Initial sequencing and analysis of the human genome

International Human Genome Sequencing Consortium Eric S. Lander1, Lauren M. Linton1, Bruce Birren1, Chad Nusbaum1, Michael C. Zody1, Jennifer Baldwin1, Keri Devon1, Ken Dewar1, Michael Doyle1, William FitzHugh1, Roel Funke1, Diane Gage1, Katrina Harris1, Andrew Heaford1, John Howland1, Lisa Kann1, Jessica Lehoczky1, Rosie LeVine1, Paul McEwan1, Kevin McKernan1, James Meldrim1, Jill P. 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Responsible Authorship

- Presentation of data
- Citing work of others
- Full disclosure
- Sharing resources

Responsible Authorship

Presentation of Data

Most professional organizations have codes of ethics

- IEEE (http://www.ieee.org/portal/pages/iportals/aboutus/ethics/code.html)
  - 3. to be honest and realistic in stating claims or estimates based on available data
- AIChE (http://www.aiche.org/About/Code.aspx)
  - Issue statements or present information only in an objective and truthful manner.
- ACS (http://pubs.acs.org/userimages/ContentEditor/1218054468605/ethics.pdf)
  - An author's central obligation is to present an accurate account of the research performed as well as an objective discussion of its significance.

Bottom line: Scholarly practice and advancement depends on having credible representations of research findings

Responsible Authorship

Presentation of Data--a Balancing Act

- Manuscripts condense the full record in lab notebooks into results and interpretations
- Paramount responsibility is in truthfully addressing
  - Inclusions and omissions of data
  - Fact versus interpretation

Responsible Authorship

Citations

- Scope of references to published work
  - Basic requirement that these have been read by the author(s)
  - Citations fairly reflect content of cited paper
  - Balancing act
    - Own papers
    - Historical context versus immediate relevance
- Unpublished communications
  - Within or external to group
  - Journals require written permission
- Most journals and professional societies provide guidance

Responsible Authorship
Full Disclosure

- Payments from sponsoring corporations
- Payments as consultant fees
- Loan of equipment, agents, materials
- Travel and institutional support
- Affiliation with involved company

Responsible Authorship
Sharing Resources

- Reproducing results
- Furthering science
- Data availability

- Conflicts
  - Expectation of authorship based on sharing reagents
  - Expectation of free dissemination of reagents once published

Peer Review-as an Author
Overview

- Submission to carefully selected journal and editor, following journal guidelines
  - Cover letter highlighting main points
  - Optional suggestion of reviewers
- Waiting period during anonymous review process
- Responding to critiques

Peer Review-as an Author
Suggesting Reviewers

- Natural set of reviewers found in cited works
- Avoid obvious conflicts of interest
  - Editors take requests for exclusions of particular reviewers seriously but are not obligated
  - Important that the nature of any serious conflicts be clearly delineated in such a request
  - Recommending reviewers who are close associates is strongly discouraged

Guidelines for Reviewers
Science

- Reviews should be objective evaluations of the research. If you cannot judge a paper impartially, you should not accept it for review or you should notify the editor as soon as you appreciate the situation. If you have any professional or financial affiliations that may be perceived as a conflict of interest in reviewing the manuscript, or a history of personal differences with the author(s), you should describe them in your confidential comments.
- If, as a reviewer, you believe that you are not qualified to evaluate a component of the research, you should inform the editor in your review.
- Reviews should be constructive and courteous and the reviewer should respect the intellectual independence of the author. The reviewer should avoid personal comments; Science reserves the right to edit out comments that will hinder constructive discussion of manuscripts.

Guidelines for Reviewers
Science-2

- Just as you wish prompt evaluations of your own research, please return your reviews within the time period specified when you were asked to review the paper. If events will prevent a timely review, it is your responsibility to inform the editor at the time of the request.
- The review process is conducted anonymously; Science never reveals the identity of reviewers to authors. The privacy and anonymity provisions of this process extend to the reviewer, who should not reveal his or her identity to outsiders or members of the press. The review itself will be shared only with the author, and possibly with other reviewers and our Board.

Guidelines for Reviewers
Science-3

- The submitted manuscript is a privileged communication and must be treated as a confidential document. Please destroy all copies of the manuscript after review. Please do not share the manuscript with any colleagues without the explicit permission of the editor. Reviewers should not make personal or professional use of the data or interpretations before publication without the authors' specific permission (unless you are writing an editorial or commentary to accompany the article).
- You should be aware of Science's policies for authors regarding conflict of interest, data availability, and materials sharing. See www.sciencemag.org/about/authors/prep/gen_info.dtl.

Peer Review-as an Author
Responding to Critiques

- Brace yourself for major concerns, founded and unfounded.
- Respond point-by-point in letter with revised manuscript
- Thank the anonymous reviewers for their helpful suggestions
- If final rejection, then consider options

- ?How much do you have to change manuscript to resubmit?

Peer Review--as a Reviewer Responsibilities

- Privileged and confidential content
- It is unethical to:
  - Use information for own work
  - Share manuscript with others, including in your own group
    - Exception: Others may assist in the review AFTER the editor has been contacted and permission granted.
  - Discuss the contents
- If asked to look at a manuscript sent to another reviewer, ask whether permission has been given

Peer Review--as a Reviewer
Should you do the review?

- At initial inquiry
  - Do you have the expertise?
  - Is there a potential conflict?
  - Can you respond in a timely fashion?

- After receipt of manuscript
  - Can you provide an impartial, professional analysis?
  - Are there ethical concerns about the work or presentation?
  - If additional information is needed to initiate or complete the review, requests can only be made via the journal editor

Peer Review--as a Reviewer Critiques

- Provide constructive criticism
- Avoid ad hominem attacks
- Focus on logical constructs and journal criteria
- May suggest other experiments if important for the scientific integrity of the work
  - Distinguish between ‘necessary for publication’ and ‘of potential interest’
- May suggest editing if important for clarity

- *Do unto others……..*

Discussion of Case Studies