PLEASE READ BEFORE WRITING A DRAFT OF A PAPER OR PROPOSAL

Authorship on papers: There are websites that describe suggested criteria for authorship on scientific papers; e.g., see the PNAS site: http://www.pnas.org/content/101/29/10495.full

All collaborators share some degree of responsibility for any paper they coauthor ...
Coauthors who make specific, limited, contributions to a paper are responsible for their contributions, but they may have only limited responsibility for other results. While not all coauthors may be familiar with all aspects of the research presented in their paper, all collaborators should have in place an appropriate process for reviewing the accuracy of the reported results.

Here is short summary from another site: Authors should be limited to **"those who designed the study, supervised the process of data collection, and are responsible for the content of the manuscript."**

These criteria sometimes, but not always, preclude including a technician as an author on a paper although they may have made a very real contribution in the form of performing experiments or making reagents. My policy has generally been to list a technician as an author on a paper if they participated in developing new techniques required for the paper, they were involved in interpreting and/or trouble-shooting experimental design and results, and/or they wrote part of the paper, but not to include someone whose role was confined to generating a reagent used in the paper (e.g., people at the PEC have been acknowledged, but have not usually been co-authors on papers that include proteins such as PEC-expressed antibodies and viral antigens).

Use CRediT taxonomy for Author contributions statement. See:
https://www.elsevier.com/researcher/author/policies-and-guidelines/credit-author-statement

Conceptualization	Ideas; formulation or evolution of overarching research goals and aims
Methodology	Development or design of methodology; creation of models
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components
Validation	Verification, whether as a part of the activity or separate, of the overall replication/ reproducibility of results/experiments and other research outputs
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse

Writing - Original Draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation)
Writing - Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre-or postpublication stages
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/ data presentation
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team
Project administration	Management and coordination responsibility for the research activity planning and execution
Funding acquisition	Acquisition of the financial support for the project leading to this publication

Example to paste into a draft paper:

Author contributions
Conceptualization: X.X.X.; Methodology: X.X.X.; Software: X.X.X.; Investigation: X.X.X.; Resources: X.X.X.; Writing – original draft: X.X.X.; Writing – review and editing: X.X.X.; Visualization: X.X.X.; Supervision: X.X.X.; Project Administration: X.X.X.; Funding: X.X.X.

Working collaboratively on documents using Sharepoint

I would like to start writing collaborative manuscripts using Sharepoint. Below are brief instructions for how to use Sharepoint so that you are using Word as you normally do (including using Track Changes and Endnote).

Google Caltech Sharepoint. You should get to https://www.imss.caltech.edu/services/collaboration-storage-backups/SharePoint.

Click on Login to Sharepoint Home.

…. (keep everything the same until after the final paragraph (before the horizontal line that marks the end of the Sharepoint instructions). Then please add this in red:

Note: If you are adding a document to Sharepoint that you want to share with others, make sure that you give them permission to edit the file/make changes rather than what appears to be the default (view the file only).

Click on the icon for My files on the left. This should list all the files you have on Sharepoint, including ones that were shared with you. Double click on the file you want to open (or you can click on a link set up by the person who shared a file with you). This will open a version of the file that you can edit. However, it is MUCH easier and avoids potential problems with cutting and pasting if you edit a Sharepoint file directly in Word. You work on the file in the Word App by clicking on the Editing menu in the upper right and then selecting “Open in Desktop App.” When you do this, you can work on the file using Word the same way that you work on any Word file,

and everyone sharing that document can see your changes in real time – this allows you to use Track Changes and Endnote plus add comments the same way that you would in any Word Document. (I do NOT recommend editing in the on-line version – strange things have happened in some cases when this was done.) When you have the Sharepoint version of a document open in Word, you can see who else has the file open – their initials will appear at the top of the document in reverse order (so, e.g., it calls me “BP”).

When you’re working with the Sharepoint version of the file directly in Word, Sharepoint automatically saves changes to the document stored in the Cloud. Note that the file name remains the same regardless of how many changes you or others make, so if you want to save a particular version or send a version to someone else, see below.

If you want to send the file to a collaborator who is not sharing the file with you, use the “Save As” option in Word, and save the file with another file name. The next time you want to edit the file, you’ll need to go back to the original Sharepoint version since the file you just saved was saved to your computer, not to the cloud.

First, please watch this video on common grammar mistakes: http://digg.com/video/yet-another-new-weird-al-track-word-crimes

Make absolutely sure that you do not lift sentences or paragraphs from something written by someone else and/or from something that you published previously. From the Elsevier Ethics in Publishing, Instructions for Authors document:

- "All reporting, writing, and editing that make up the content of the submitted paper shall be the original work of the authors and shall not plagiarize the work of others.
    - *Plagiarism* can mean the literal copying of the entirety of another's article or paper or other text.
    - *Plagiarism* can also mean the literal copying of large portions of another's work or even the substantive "paraphrasing" of another's work.
    - In all of these cases of plagiarism, the authors whose work is being copied or reproduced may also have legal claims with respect to copyright infringement or violations of their moral rights.
- Short quotes from the work of others are typical in the preparation of scholarly or professional manuscripts, but all such quotes should be properly referenced with full bibliographic details of the quoted work, as it is important to place the reported research or conclusions in a scholarly context.
    - Note that to quote or copy text or illustrations beyond a "short quote" will require the author to obtain permission from the rights holder."

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1) Papers should generally be written in the past tense when presenting results. The exception to this might be the description of a crystal structure, where I find it hard to describe the structure in the past tense. But for other results, in a paper, you should use past tense.
From one website about writing scientific papers:
 Use present tense to report well accepted facts - for example, 'the grass is green'
 Use past tense to describe specific results - for example, 'When weed killer was applied, the grass was brown'

2) The word “data” is plural.
The data were…. CORRECT
The data was… INCORRECT

3) Use one space, not two, after the end of a sentence. See
http://www.dailywritingtips.com/one-space-or-two-at-the-end-of-a-sentence/

4) i.e. versus e.g.
http://grammar.quickanddirtytips.com/ie-eg-oh-my.aspx
I.e. and *e.g.* are both abbreviations for Latin terms. *I.e.* stands for *id est* and means roughly "that is." *E.g.* stands for *exempli gratia*, which means “for example.”

5) Use a comma after i.e. or e.g. (http://grammar.quickanddirtytips.com/ie-eg-oh-my.aspx)

6) “It’s” means “It is” and “its” is the possessive form of the pronoun it.
CORRECT: It’s the first day of its life.
INCORRECT: Its the first day of it’s life.

7) The word “comprised” should not be followed by the word “of,” but the word “composed” must be followed by “of.”
e.g., “A Quidditch team comprises three chasers, two beaters, one keeper and one seeker” or “A Quidditch team is composed of three chasers, two beaters, one keeper and one seeker.” It is NOT correct to say, “A Quidditch team is comprised of three chasers, two beaters, one keeper and one seeker.”

8) Should you start a sentence with the word “however”?
See http://www.quickanddirtytips.com/education/grammar/starting-a-sentence-with-however-right-or-wrong

Here are some quotes from the above website:

It is fine to start a sentence with however. You just need to know when to use a comma and when to use a semicolon.
The comma is important because however is a conjunctive adverb that can be used in two different ways: it can join main clauses and it can modify a clause.
If you use however at the beginning of a sentence and don't insert a comma, however means “in whatever manner,” “to whatever extent,” or “no matter how.”

For instance, Winston Churchill said, “However beautiful the strategy, you should occasionally look at the results,” and for those of you who like more modern examples, on the TV show House, Dr. Foreman said, “However bad you think you’re going to be in that room, not being there is worse.”

In both those cases, however isn't playing a role as a conjunction. It's not joining anything to anything else. It means “no matter how.” “However bad you think you’re going to be” and “No matter how bad you think you’re going to be” mean the same thing. I don't think anyone has ever disputed starting a sentence with however when it is used that way.

When you put a comma after however at the beginning of a sentence, everyone knows it means “nevertheless.” There's no reason to outlaw a perfectly reasonable use of the word when you can solve the problem with a comma. Some writers have even gone so far as to say it is

preferable to start sentences with however instead of burying the word in the middle of a sentence, because putting it at the beginning makes the connection between sentences more clear and therefore makes the text easier to scan.

9) Use of “which” versus “that”
This is confusing and British English has different rules than American English, but most people incorrectly use “which” in American English when they mean “that.”
Read http://grammar.quickanddirtytips.com/which-versus-that.aspx
before you start writing a paper or your thesis.

10) Be careful with adjectives – what might strike you as “very” different, “extremely” large, or xx (insert your favorite phrase with an adjective) may not seem that way to someone else, so just say that it is different or it is large. Here’s a helpful quote from Mark Twain about this, “Substitute 'damn' every time you're inclined to write 'very;' your editor will delete it and the writing will be just as it should be.” I also usually avoid the words “unique” and “novel” (note that, by definition of these words, it is impossible for something to be “very unique” or “very novel”). Finally, be careful about using the word “significant.” Some journals will not allow the word “significant” to be used in a paper unless you include statistics establishing significance.

11) Quote from Russell Doolittle’s book: “Probably no word causes more confusion in this field than the word “homologous”. When two sequences are homologous, they share common ancestry. In this sense, there are no degrees of homology. Sequences are either homologous or they are not. Many investigators use the word when the mean "similar”. Two sequences may be similar by chance, for example. They may resemble each other to a high degree, but they ought not to be very homologous or slightly homologous. Also, two sequences may be 60% identical, but they are not 60% homologous.”

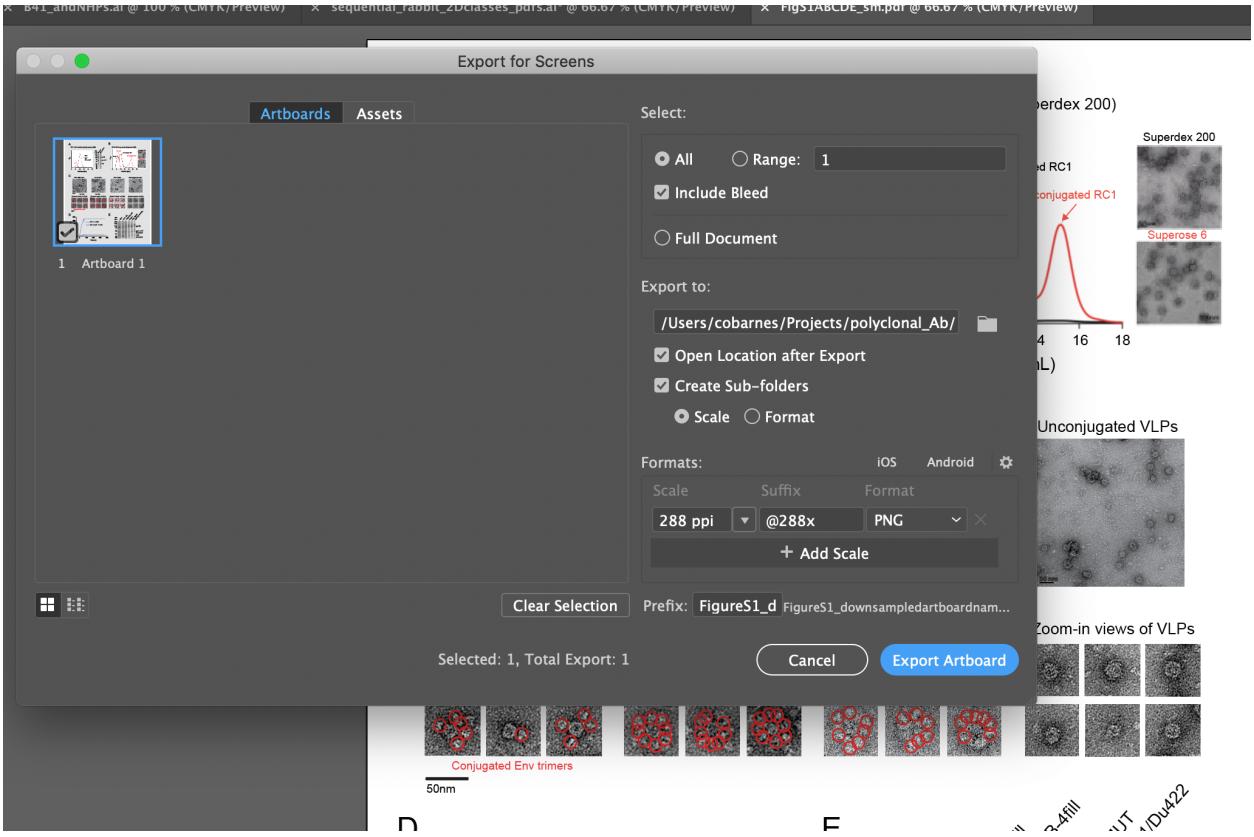
See http://www.theallium.com/science-life/evolutionist-loses-it-as-colleague-conflates-homology-and-similarity-yet-again/ for possible consequences when someone gets this wrong.

12) To report equilibrium dissociation and kinetic constants, use approved nomenclature: K_D (uppercase K in italics and uppercase non-italics D as subscript) for affinity; k_a and k_d for on- and off-rates (lowercase k in italics and lowercase non-italics a or d as subscript). Remember to report units (molarity for K_D; $M^{-1}s^{-1}$ for k_a; s^{-1} for k_d.

13) Don’t create figures in Powerpoint. Many journals won’t accept powerpoint figures even if they’ve been converted (e.g., from the J Exp Med website: Please note that files saved as TIFF or EPS from within the PowerPoint application are NOT at sufficiently high resolution to meet our formatting requirements.

14) **How to reduce the size of Illustrator files to put them into a Word document for submission to a journal:** First, save the full-size file as an Illustrator pdf in the folder where you’re storing your files. When you’re ready to insert a figure into a Word file, open the pdf using Illustrator, go to File -> Export -> Export for screens, and then save images as pngs and manually change resolution from 288 ppi to 150 or 96 ppi (changing resolution is done under Scale/resolution).

In Word, you can also use the menu option under File that says Reduce file size to make a Word file small enough to email.



15) If you are including a crystal structure in your paper, note that you MUST have refined that structure to have Rfree and Rwork values that are in the top 50% for the resolution that you are reporting. Check out other structures in the PDB at your resolution and make sure that your statistics are in the top 50% and make sure that you have refined to minimize Rfree, not Rwork (i.e., the difference between Rfree and Rwork should not be unacceptably large). The following papers discuss common problems in crystallographic refinement that result in high Rfree values (e.g., not using non-crystallographic symmetry restraints/constraints at low resolution, refining individual B factors at low resolution, etc.)

1) Bränden & Jones (1990) Between objectivity and subjectivity.
Nature 343: 687-689. (written before R_{free} commonly used)
2) Kleywegt & Jones (1995) Where freedom is given, liberties are taken.
Structure 15: 535-540.
3) Kleywegt & Jones (2002) Homo Crystallographicus -- Quo Vadis?
Structure 10: 465-472.
4) 2017 paper: Validation of structures in the Protein Data Bank: https://www.sciencedirect.com/science/article/pii/S0969212617303374

16) If you are reporting buried surface area (BSA) for an interaction, specify whether the number you are reporting refers to the entire interface or to the BSA on one of the interacting partners.

17) If you are calculating a root mean square deviation (rmsd) after superimposing structurally related proteins or domains, this must be calculated on carbon-α atoms only (NOT ON ALL ATOMS) and you must say how many carbon-α atoms were used for the calculation.

18) Example of what should be included in a Methods section of a structure paper (but don't copy this exactly – that would be plagiarism since this is from a lab paper).

Buried surface areas were calculated using PDBePISA (Krissinel and Henrick, 2007) and a 1.4 Å probe. Potential hydrogen bonds were assigned using the geometry criteria with separation distance of <3.5 Å and A-D-H angle of >90˚. The maximum distance allowed for a potential van der Waals interaction was 4.0 Å. Protein surface electrostatic potentials were calculated in PyMol (Schrödinger LLC). Briefly, hydrogens were added to proteins using PDB2PQR (Dolinsky et al., 2007), and an electrostatic potential map was calculated using APBS (Baker et al., 2001). Epitopes for antibodies in Figure 3 were identified as gp120 residues containing an atom within 4 Å of an antibody as calculated in PyMol (Schrödinger LLC).

19) All micrographs in a paper must include a scale bar with a legend stating the length of the bar (usually in nm).

20) Please read the instructions for authors for the journal to which you'd like to submit the paper so that you know whether they want you to say Figure 1A, Fig. 1A, Figure 1a, Fig. 1a or some other permutation, length restrictions for various sections of a paper, order of presentation, and other stylistic rules that differ from one journal to another.

21) I would prefer that people prepare drafts of papers using Arial 11 as the font because that font is allowed in NIH grants and I sometimes copy sections from a paper into a grant (Times and Cambrian fonts are not allowed for NIH grants).

22) Acknowledgements — A new NIH policy (spring 2025) says that all papers supported by NIH funding now have to be publicly released at PubMed Central on the day of publication, not within a year, as per the previous policy. See summary of new rules here: https://doi.org/10.7907/es3av-5je02

NIH suggests authors use the following statement in the Acknowledgment section of their articles:

- "This manuscript is the result of funding in whole or in part by the National Institutes of Health (NIH). It is subject to the NIH Public Access Policy. Through acceptance of this federal funding, NIH has been given a right to make this manuscript publicly available in PubMed Central upon the Official Date of Publication, as defined by NIH."

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