

Introduction to Professional Scientific Communication
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Lecture - 18
Finalizing the Manuscript and Ethics in Research

So, welcome back to this week four lecture of the course introduction to professional scientific communication. So, in the lecture so far, we have looked into how to write the results section, how to make figures, how to write discussion and then we also discussed about the acknowledgment and the reference section.

So, we pretty much done everything with regard to how do you write a research paper. If you ask me the question; are we done with that? No, we yet to discuss something which is equally important, that is the seventh bullet in this particular slide coming from the paper; how to write your first research paper.

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Yale J Biol Med, 2011 Sep;84(3):181-90
How to write your first research paper.
Kallisthova ED¹.
Author information

Abstract
Writing a research manuscript is an intimidating process for many novice writers in the sciences. One of the stumbling blocks is the beginning of the process and creating the first draft. This paper presents guidelines on how to initiate the writing process and draft each section of a research manuscript. The paper discusses seven rules that allow the writer to prepare a well-structured and comprehensive manuscript for a publication submission. In addition, the author lists different strategies for successful revision. Each of those strategies represents a step in the revision process and should help the writer improve the quality of the manuscript. The paper could be considered a brief manual for publication.

1. Create regular time blocks for writing as appointments in your calendar and keep these appointments.
2. Create a detailed outline and discuss it with your mentor and peers.
3. Be meticulous and accurate in describing the Materials and Methods.
4. Be clear, concise, and objective in describing your results.
5. Interest your reader in the Introduction section by signalling all its elements and stating the novelty of the work.
6. Present the principles, relationships, and generalizations in a concise and convincing tone.
7. **Revise your paper through critical reading. Receive feedback and revise again.**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3178846/>

The diagram shows a manuscript structure with sections numbered 1 to 6. The sections are: 6 Title, 5 ABSTRACT, 3 INTRODUCTION, 1 METHODS, 2 RESULTS, and 4 DISCUSSION. A red arrow points to the number 4 next to the DISCUSSION section.

Which says, revise your paper through critical reading receive feedback and revise again. The meaning of this particular bullet is that you know if you have written your; you know research paper it does not mean that it is complete. It is still incomplete, you need to go back read and then read as a reader now not as an author and then change as an author as to how to improve the text such that it is able to convey. You know revising paper or editing manuscript the draft is an art.

So, what you see here in the slide is a stone. This is your something like the first version of your manuscript.

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It has to be revised and revised again to make what you call as a diamond. The diamond is made out of stone, but now you can understand how much time it took for the guy, who really work on this diamond to make it like such a beautiful object, it glitters and you know sells, in crores in the market, right. So, that is what all about.

So, you have to revise the manuscript as many times until it is a finished product. Roomba it is a raw product and then it is like a stone that is shown on the left side, and you have to work on it until it becomes so beautiful as you see on the right side of your screen.

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Yale J Biol Med, 2011 Sep;84(3):181-90.

How to write your first research paper.

Kalleshinova ED¹.

On revising/editing the manuscript draft

Despite your attempts to present your ideas in a logical and comprehensive way, first drafts are frequently a mess. Use the advice of Paul Silvia: "Your first drafts should sound like they were hastily translated from Icelandic by a non-native speaker". The degree of your success will depend on how you are able to revise and edit your paper.

Thus exactly was told by the author here. Despite your attempts to present your ideas in a logical and comprehensive way, the first drafts are frequently a mess. You give it to any reader you will say I do not get anything out of it that is what the reader will say use the advice of Paulus Sylvia.

First draft should sound like they were hastily translated from Icelandic by a nonnative speaker. So, something that for example, you know I know diagonally script for example, Hindi; then, I will try to read the literature that is written in Sanskrit I know this script because now I think that I can translate something. If I translate it may not really match exactly what he said in the Sanskrit to for example, some other language that is a nonnative speaker. So, the degree of your success will depend on how you are able to revise and edit your manuscript. So, you have to go back and improve, improve, improve until it gets better.

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On revising/editing the manuscript draft

*The revision can be done at the **macrostructure** and the **microstructure** levels. The macrostructure revision includes the revision of the organization, content, and flow. The microstructure level includes individual words, sentence structure, grammar, punctuation, and spelling.*

So, the revision can be done at the macro structure and at the micro structure. There are two different levels at which you do revision what is that? The macro structure revision includes the revision of organization. Let us say I bring in certain ideas and then bring in hypotheses the idea that I bring in maybe not in the flow, I want to rearrange them therefore, it is conveys the meaning better. So, that is the revision of the organization content and flow, right.

The micro structure is that every sentence you know what words you use, how do you coin the words what you know how do you convey you know that that is what it is individual words, sentence, structure, grammar, punctuation and spelling all these fall into the you know micro structure. So, you basically want to first go and do a macro structure revision, and then go and look at micro structure revision; you cannot do both together because the context varies. So, you rearrange the sentence, now the context because you have to remember every sentence we said there is a given there is a new.

So, if you have rearrange this sentence now the macro structure, then the given now is different right. So, you have to rearrange therefore, you always you want to do a macro structure first rearrangements, and then get into the micro structure once you finalize the macro structure then you know the manuscript make it better.

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On revising/editing the manuscript draft

The final strategy is working with a hard copy and a pencil. Print a double space copy with font size 14 and re-read your paper in several steps. Try reading your paper line by line with the rest of the text covered with a piece of paper. When you are forced to see only a small portion of your writing, you are less likely to get distracted and are more likely to notice problems. You will end up spotting more unnecessary words, wrongly worded phrases, or unparallel constructions.

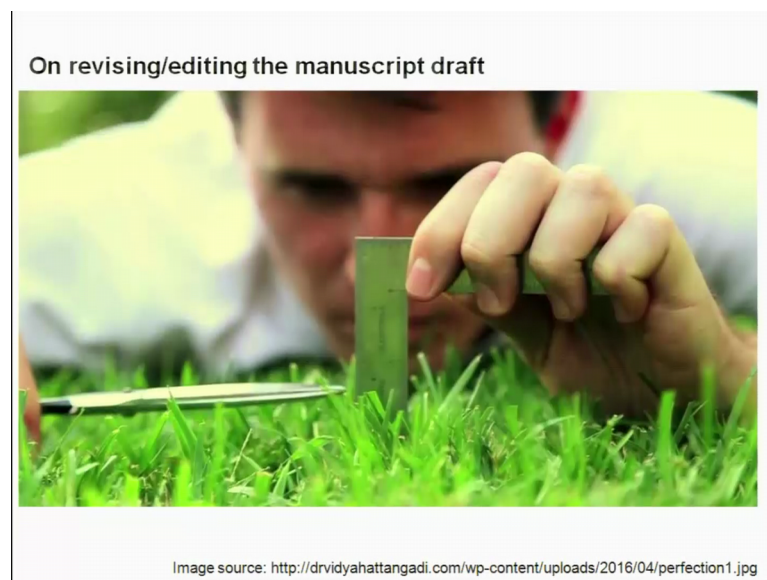
The final strategy is working with a hard copy and pencil is important, no matter how you are good with your computer and you can finish everything with computer is better always is always advisable that you take a printout, although you typed everything and using a laptop or your pc. Take a printout of your manuscript, it double spaced copy, write and reread you do a paper several times using the paper, read, read, read, again try reading your paper line by line, with the rest of the text covered with a piece of paper.

So, you only concentrate on that particular line in a small section and see whether it makes sense. When you are forced to see only a small portion of your writing we are less likely to get distracted or more likely to notice problem and correct it. You know often we you know miss out there could be small spelling mistake that would be grammatical error there, is something missing, a word is missing or punctuation is missing, all these things we can address if you are able to look at a small section of the you know and then look at it that is where when you take a printout of your paper, manuscript in a double space.

So, in a page you may have 12, 14, 15 lines. So, you can go by line by line correct everything using pencil, and then go again and read what you are corrected. Because you are using a pencil to correct and see wherever the corrections are proper and finalize and then go and edit your manuscript in the you know the soft copy. So, that is important.

So, you will end up spotting more unnecessary words wrongly worded phrases or unparallel constructions, these are all can be corrected. Always remember if you can say something without using that particular word you know. So, you better to do without that word you say that these results very strongly correlated right, vary can be removed strongly correlated right. So, this is the way you go and look at it many of the words that even if you remove, you know, it does not make any difference. So, you keep on removing, removing until you feel that no, I cannot remove any work. So, that is the way you can really really make you know text very brief, yet it conveys, what you wanted to convey, right.

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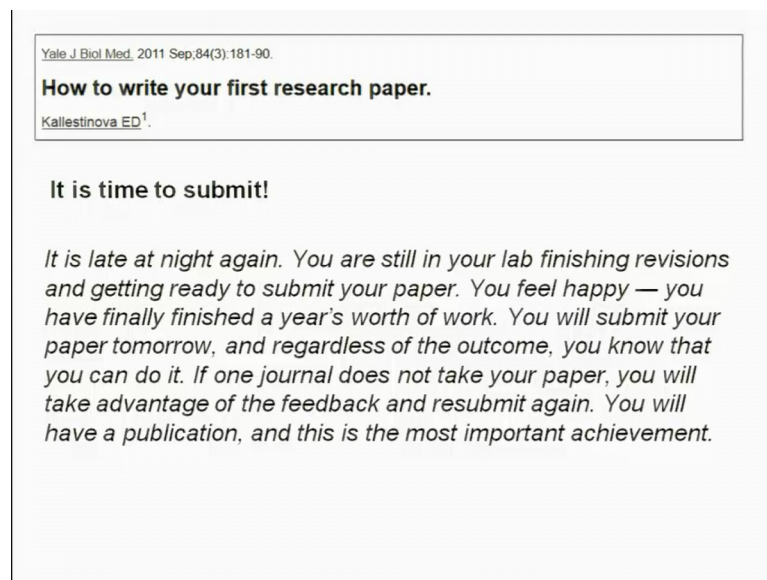
Now, it is a laborious process for example, if you want to be a perfectionist and your supervisor asked you to go and you know cut all the grass in the lawn, now you take because you are a researcher you take a scale and a scissors and measure every grass as to what is the height it should be and start trimming by the time you finish about 1 meter the grass on other section would have grown again by one centimeter, right.

So, it cannot be done, you know you have to have some limit as to how many revisions you can make, the question is how many you can do right is there any limit? How do you do that? That is why the first bullet of the paper is very very important. That is create regular time blocks for writing as appointments in your calendar and keep these appointments. You should have given to yourself one week time for revision therefore,

you have completed your draft making and you know that 7 days I have I go through at least 7 times to revise my manuscript. And I have the deadline, the deadline is I have to give it to my mentor, my supervisor he has got three weeks and he will submit right.

So, you have to keep this deadline otherwise you keep on working on your revision if you do not have a deadline and you end up not really improving much right. So, that is why you need to have these deadlines, that really really helps you to finalize your project and then and then submit and who knows the referee is look at and then they may often suggest changes, that may further improve and the paper gets accepted therefore, it is important.

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How to write your first research paper.

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It is time to submit!

It is late at night again. You are still in your lab finishing revisions and getting ready to submit your paper. You feel happy — you have finally finished a year's worth of work. You will submit your paper tomorrow, and regardless of the outcome, you know that you can do it. If one journal does not take your paper, you will take advantage of the feedback and resubmit again. You will have a publication, and this is the most important achievement.

So, when you are done with everything, including your supervisor corrected right then you see that he has done will all have changes that has really improved now it is time to submit. That day you would feel extremely happy, because you submitted the paper, but our times your happiness does not stay long. So, you are done with it is a late at night again, you are still in your lab finishing revision I am just reading out from that paper how to write first research paper, I am reading it again and again because it is such a lucid little proper issue you should all of you paper issue all of you should read this paper.

You are still in your lab finishing revisions and getting ready to submit your paper, you feel happy. You have finally, finished a years worth of work, you will submit your paper

tomorrow and regardless of the outcome you know that you can do it, that you are able to complete. What you wanted to do write it and submit as a paper, that is what great thing about it if one journal does not take your paper you will take advantage of the feedback and resubmit again, because when they reject they will say your paper is not accepted because of this this problem. So, it is a feedback. So, that helps you to restructure your paper. So, there is nothing like you are lost, even if a you proper is not accepted it is not that you lost something you gained; the gaining is that they are giving you feedback.

Now, you know what you lacked, what points you did not look at, possibly you missed out interpreting something in a different way that is what helps you. That helps you to grow, mature as a scientist. You will have a publication one day absolutely no problem and this is the most important achievement right because you can always take feedback and publish and you are able to convince them finally, publish and all the other researchers in this area are able to read what you are done and appreciate you.

Now, the success of your paper now depends on what you are done not necessarily which journal you are published. Now more people look at your paper more people cite you then you know that they acknowledged you right and more papers you publish in this area, then they identify you here is a person in this particular city, in this particular institute, in this particular country working on this.

So, invariably when they write a paper then cite your work because they know that you have been publishing your results are reproducible and they have a respect for you that is very very important that is how you gain respect, because you may not have met the other community right other field other researchers in this area. You know them only by the webpage or the publication, but yet they respect each other because of the work that you are able to put across using publication and that is what more important in any research field.

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So, let us look into how now a paper is being reviewed. Now you have submitted a paper now yet time is rejected yet time it is accepted. So, what is the process right. So, here I am showing a schematic; the schematic is again taken from a publisher while we showing as to how it works. So, authors submit an article mostly these days it is then using online porters there are submission websites, you will to register yourself as an author, contributor and then there are several section that you have to fill in, and upload your manuscript as a word format upload your may know figures in certain format and tables and so on. So, there are so many queries that they will ask you have to filling. So, that is called a submission of article.

So, once it is submitted it goes to the editor, normally the journal may have what is called as editor in chief. So, he is a chief editor, he may look into your paper and then you will assign the paper to one of the handling editors. A journal may have some twelve twenty thirty handling editor tells a different field, depending on the keywords remember I explained that you know and you are writing about title and abstract, the keywords are important because even for the editor to find a handling editor, they use these keywords and then find who could possibly the best handling editor, who can review your paper it may go to the handling editor or a chief editor may himself look at.

And then what they do is that, they assess, they read they look at your abstract, they look at the title plus you are supposed to write what is called as a cover letter. The cover literal

meaning a letter addressed to the editor you know justifying as to why your results, your observations, your findings that are documented in the research paper, should be published in the journal. So, in that you even say as to what was your past record meaning you have been working on this you know particular field for some time or what is the novelty in your work. You sort of you know bring out the best significant features of your manuscript and tell the editor as to why should be reviewed if not you know accepted.

Therefore that reader the editor look into this cover letter, they look at the abstract, quickly go to the figures and look at the overall paper and they may find that is not really that good may be rejected. So, straight away within a week ten days the paper may come back saying you know that they are unable to consider this because of you know various reasons. Or if the you know the results, and your observations, your writing everything is compelling enough. So, the editor or handling editor may consider sending your manuscript reviewers.

So, basically these are the people, who work in similar area were experts who can read your paper and judge how good the findings are whether they are supported by very good experiments whether it can be published. Normally it is two three referees that are sent, then they go through and then they give comments recommendations to the editor the recommendations could be the following; one the referees may say this is not a good work rejected, they will say to the editor you should not be published. So, the editor now take their decision and then say is rejected or they may say that it is very interesting significant, but these are the weakness of the paper. So, you may want to address these questions and then resubmit your paper is call is a it is called as what is called as revision right.

So, once that comes, then the editor looks into you know all the two or three referees recommendation and you will send you the paper with the comments saying that can you address all these concerns, can you do the additional experiments, can you revise, can you submit and then they give you some timeline one month, two months, three months, within which you have to resubmit the revision with you know the specific question that the referee asked how you address the questions, you ought to give what is called as a rebuttal or you know in each query that they has each question they asked you were to give a response, and it should be very very convincing because most often the when the

when your resubmitted the paper it it will go to the same referee and he is going to look into the question that he asked and what answer you had given right.

So, therefore, it has to be convincing and you should have done all the experiments as much as possible and if you cannot do or if the question is not valid, you have to say why you do not consider that is important and so on. So, based on that relation they review referees again read, and they recommend for acceptance, sometimes it may be rejected. So, once it is accepted you know it is a manuscript that is accepted; now it will be sent for the production. Now the publishers take it process it and then typeset it and then it comes like almost like a publication stage they will send you what do you call it a proof for you to go through once for any errors that are there and once you go through the proof and then you accept that everything is fine it will be published. So, that is a final version of your paper. So, that is the way the papers get published.

Now, you have certain now we are going to look into some of the ethics like when you do research and when you publish, there are certain important practices that is called as ethics in research and publication that are expected, and then all of us who practice science should know this and often some of us do not know I gave you one example that is called as copyright. Like if you are used some published material, any figure schematic in a pure paper without citing them without having their permission, then this is unethical it is considered to be not something acceptable right.

So, you let us look into that. So, now, I am going to again give you list of certain guidelines not everything, but overall guidelines, again these are from a publisher the LCVR and the link that is given, you can go and read more on that, and it talks about first authorship who are all you know you know when you write a manuscript there are two authors three authors single author ten authors who could be an author right.

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Ethics in Research & Publication

https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/Brochure_Ethics_2_web.pdf

Authorship
an individual who has made a significant intellectual contribution to the study

Conflict of Interest
When an investigator, author, editor, or reviewer has a financial/personal interest or belief that could affect his/her objectivity, or inappropriately influence his/her actions, a potential conflict of interest exists

Plagiarism
One of the most common types of publication misconduct is plagiarism – when one author deliberately uses another's work without permission, credit, or acknowledgments

Simultaneous submission
Duplicate publication

Research fraud
Fabricated data

An individual who has made a significant intellectual contribution to the study, who worked for it who analyzed the results who wrote the paper that is what who qualify for an authorship.

Second conflict of interest they will ask you this whether you have any conflict of interest when you submit a paper what is that? When an investigator, author, editor or reviewer as a financial or personal interest or believe that could affect his her objectivity, inappropriately influence his or her action a potential conflict of interest exists. Let us say I am working on certain on my interest is to test certain compounds on the how does it affect the skin. My findings say that this compound really held this skin to grow better and so on.

Now this is a compound that is used in say some skin lotions, and the company that form you know markets this product. He is funding me for this research right now it is a conflict of interest; because they are financing me to study that how good it is and I am publishing that result that is a conflict because I may be because they are paying me for it, I may think that possibly that is something that that the way how you know devised my objectives and conducted experiment may have some bias because it is funded by them. If that is the case I have to identify whether they have directly involved in for example, in the execution of this results or whatever it is.

If I have any ownership in any company whether that company has any conflict of interest with my research, there are many such things or if I am an editor of the journal and I am an author now I am submitting I myself handle that paper. So, it is a conflict of interest. There are a number of ways by which the conflict of interest may come. So, you have to be extremely careful.

And the other serious problem is plagiarism. So, this is one of the major you know issues nowadays with this because most often people do not know as to what is this issue; because more often it happens because with all these internet another thing we can copy any text you can again paste it and then becomes part of your paper, that easily can be again identified because another are software which can quickly tell whether that section of that in your manuscript has you know a significant correlation or match with already existing literature.

So, what are the most common types of publication misconduct is plagiarism, when one author deliberately uses another's work without permission. So, you have narrated the same thing without citing that and second credit or acknowledgement or you know you verbatim use that and you are not cited, you know there are various consist considered as plagiarism. But if you say inverted quote this is what the author said and you put their reference, then it is perfect because you are saying that, this is what they said that is because you are giving the credit. So, therefore, you have to understand this there are a number of sites which gives you more information on the plagiarism you have to go and look at it.

The other important problem is that simultaneous publication that is you have a data, you have written a manuscript. Now you do not know whether this will be accepted in your journal. So, you do not want to waste time you will just submit this paper in one journal you also submit the paper another journal, let us say whichever except first I will go with that right is again is unethical. Because every time you submit a manuscript to a journal you also say that this is not being considered for publication in another journal at the same time. So, this is you are to give and that should be important.

Research fraud is another important element, this is called as a fabricated data. So, you are not done experiment, but you are just made some data and based on that your

writing paper this is again scientific misconduct often such kind of problems come you have to be extremely extremely careful.

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The image shows a screenshot of a journal article page. At the top, it says "Ethics in Research & Publication". Below that is the Wiley logo and the journal title "INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. SUPPLEMENT". There are four buttons: "This Article", "For Authors", "Learn More", and "Submit". Below the buttons, it says "Int J Clin Pract Suppl. 2007 Jan; 61(Suppl 152): 1-26." and "doi: 10.1111/j.1742-1241.2006.01230.x". On the right, it says "PMCID: PMC1804120". The main title of the article is "Best Practice Guidelines on Publication Ethics: a Publisher's Perspective". The authors listed are "Chris Graf,¹ Elizabeth Wager,² Alyson Bowman,¹ Suzan Fiack,³ Diane Scott-Lichter,⁴ and Andrew Robinson¹".

So, there is a paper, this is jointly published by the publishers right it is came in likewise there are many papers, I am just putting something here for you to go on because it looks at a wide variety of problems, which addresses the ethical issues and in publications it says best practice guidelines and publication ethics, publishers perspective.

So, it is from publishers they are saying that what are the issue that you need to look at it, what is the best practice for you to you know publish, and then you may want to go and read that it is an interesting you know paper that really really talks about all these things right. So, that is pretty much ends you know our todays discussion on the discussion reference acknowledgement and ethics in publication, and we have one more lecture to wind up this turn our coach, we will we meet again.