1. Developing your PhD Proposal Outline and Writing Your Proposal

2. Introduction to writing a CV

Jacob D. Wickham, PhD

Managing Editor, Integrative Zoology
Academic Trainer, Editage

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About the speaker

Dr. Jacob Wickham

Dr. Wickham is Managing Editor of the journal *Integrative Zoology* and Assistant Professor at the Institute of Zoology in the Chinese Academy of Sciences (CAS) and Adjunct Professor at the Department of Entomology in Rutgers University.

An award-winning and celebrated zoologist, Dr. Wickham has over 15 years of experience in academic publishing and has published several papers in high impact journals.

Dr. Wickham has gained a lot of valuable experience in research and journal publishing over the years and is passionate about sharing his knowledge with researchers to help them in their publication journey.

ABOUT Dr. Wickham

10+ years of work experience in USA and China:

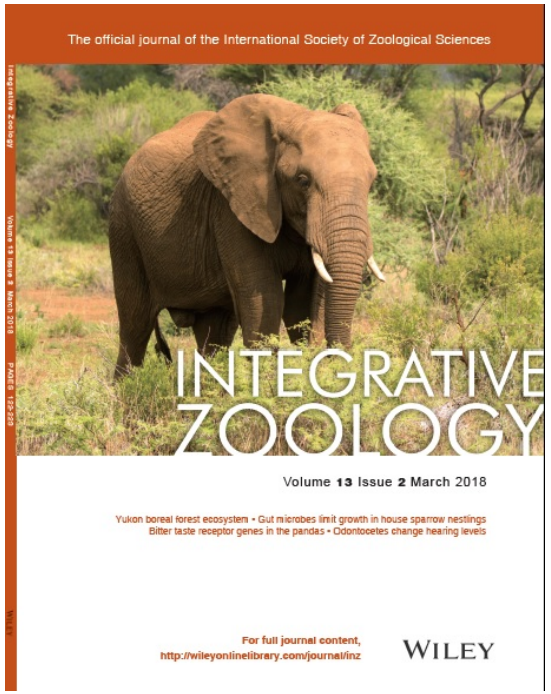
Managing Editor, Integrative Zoology
2014 – present

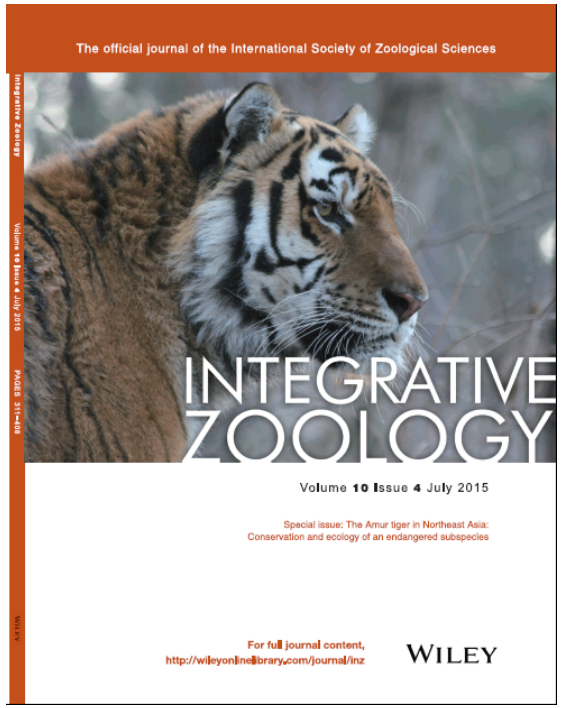
Senior Editor, Integrative Zoology
2017 – present

Visiting Professor, Institute of Chemistry,
Chinese Academy of Sciences
2010 – 2017

Adjunct Professor, Rutgers University
2016 – present

Assistant Professor, Institute of Zoology,
Chinese Academy of Sciences
2017 – present

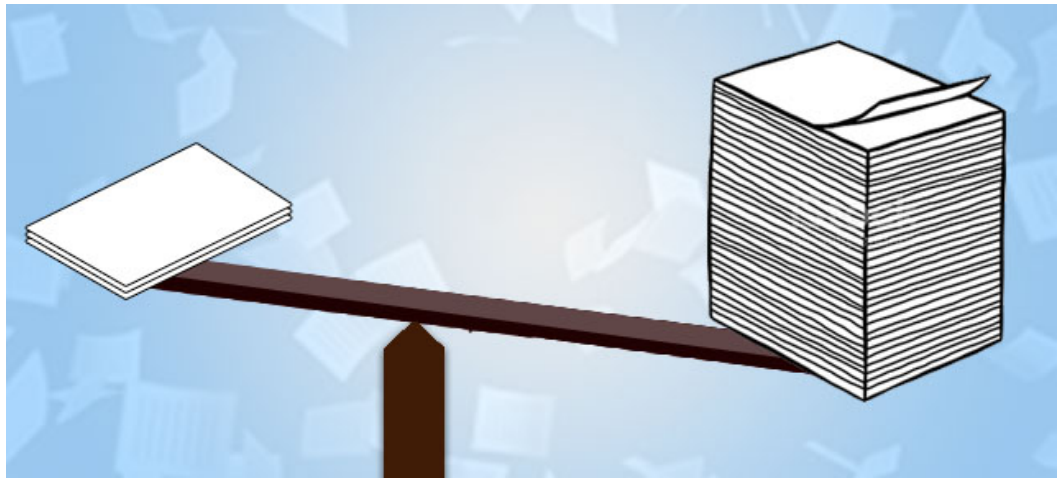


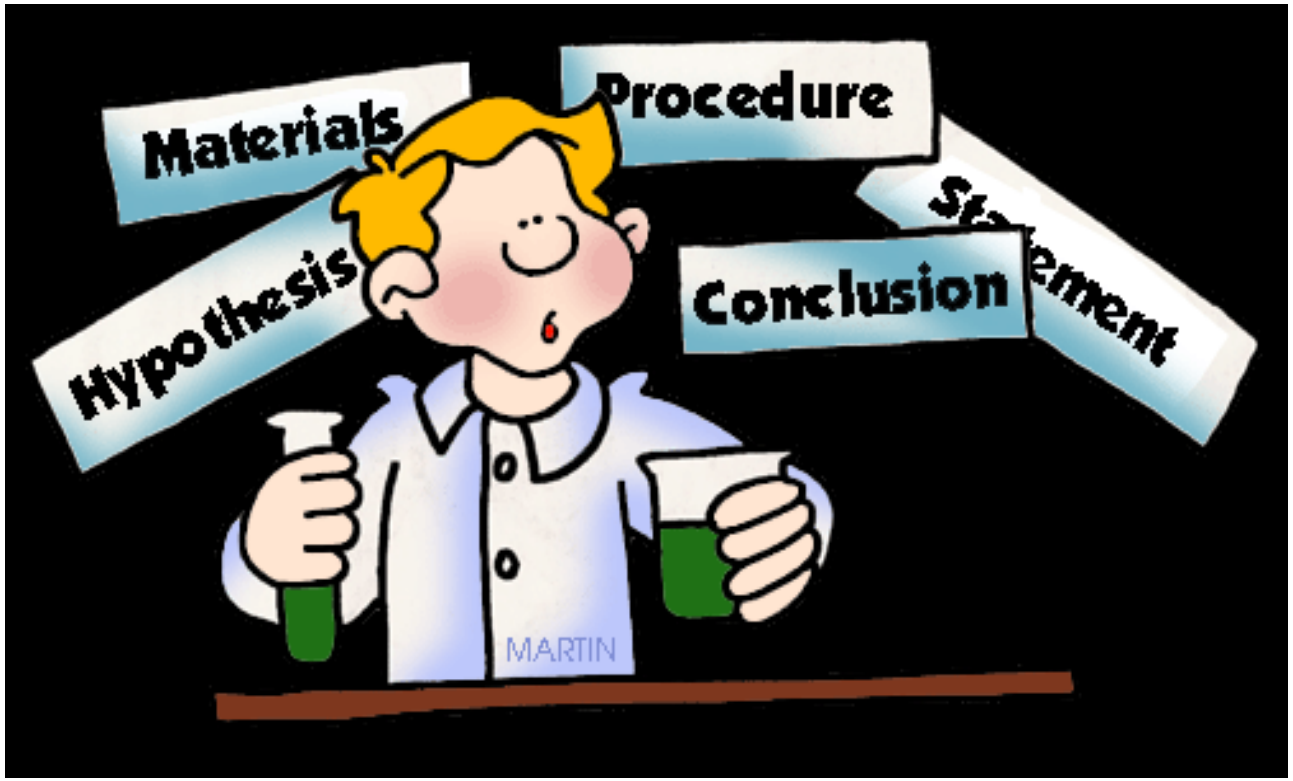


Outline of Webinar

1. How a Thesis is Different from a Scientific Paper
2. 8 Steps to OUTLINE your Ph.D. Dissertation Proposal
3. 12 Steps to DRAFTING your first draft
4. Expected Results – Methods Design – Preliminary Studies
5. How to Write Your CV

How can you go about writing the perfect PhD dissertation proposal which looks like a complete package?

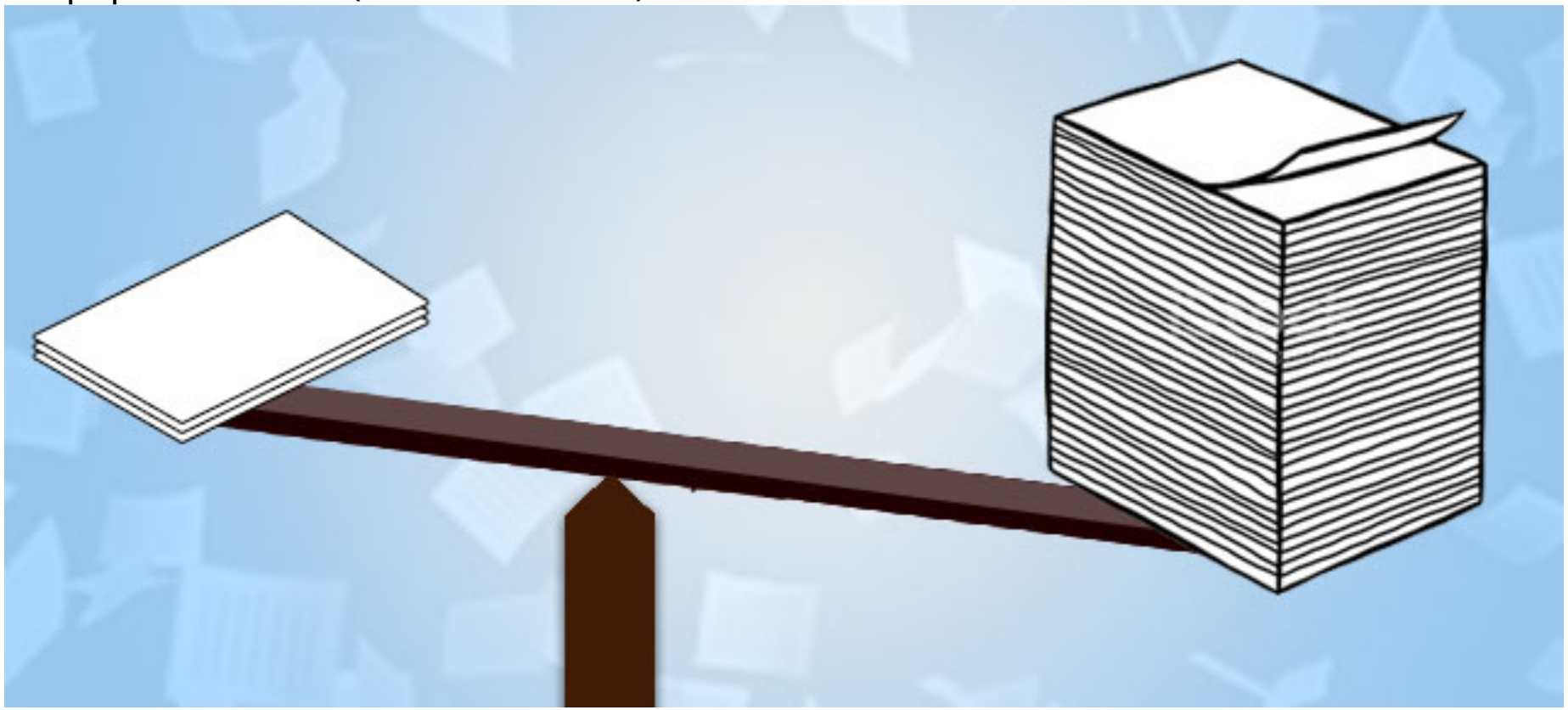




1. How a THESIS is different from a scientific paper?

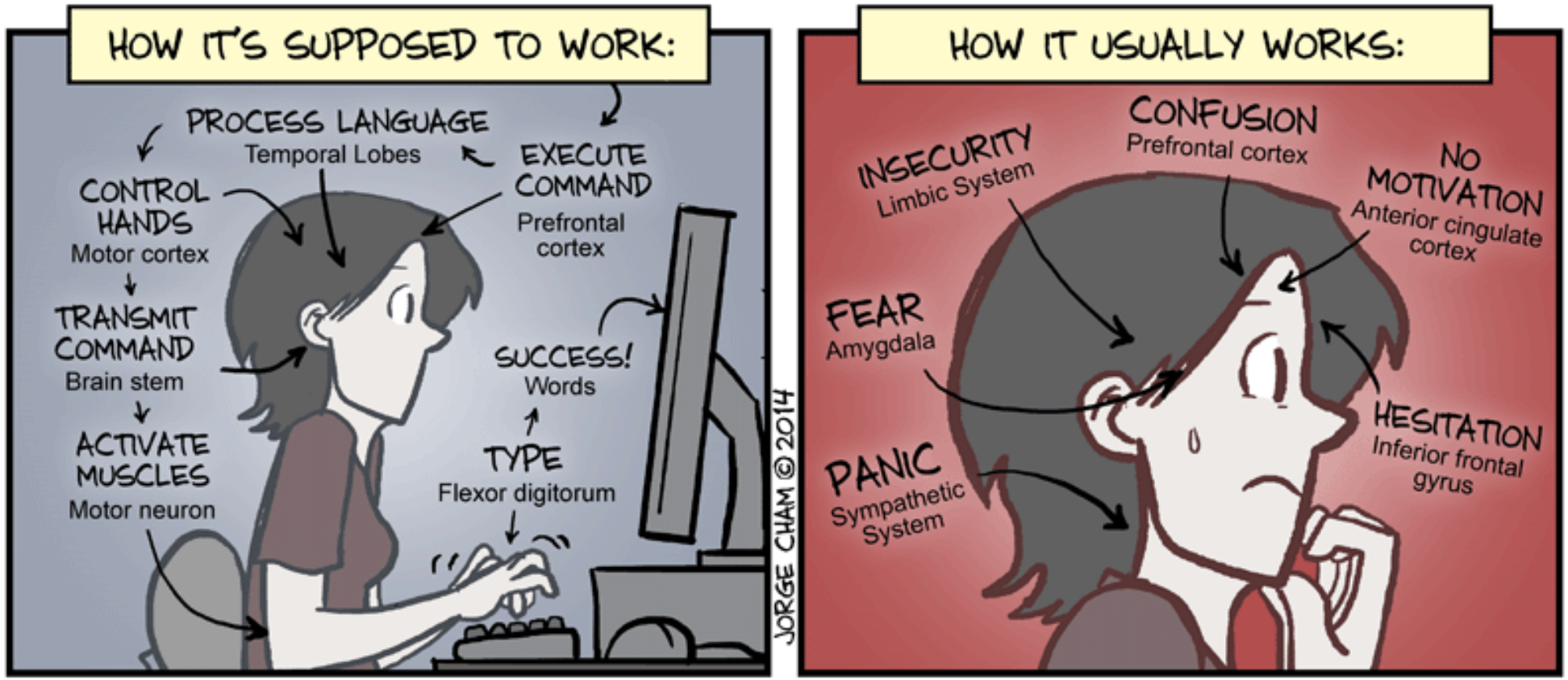
Before you start writing

- Writing thesis is a skill; is different from writing a journal article.
- Key differences not only in breadth of writing, but also style of writing. For journal articles, concise, clear, structured writing is key, whereas reports, term paper, or thesis (Masters or PhD) are more flexible



For details, refer to: *https://www.editage.com/insights/9-differences-between-a-thesis-and-a-journal-article*

THE NEUROBIOLOGY OF WRITING



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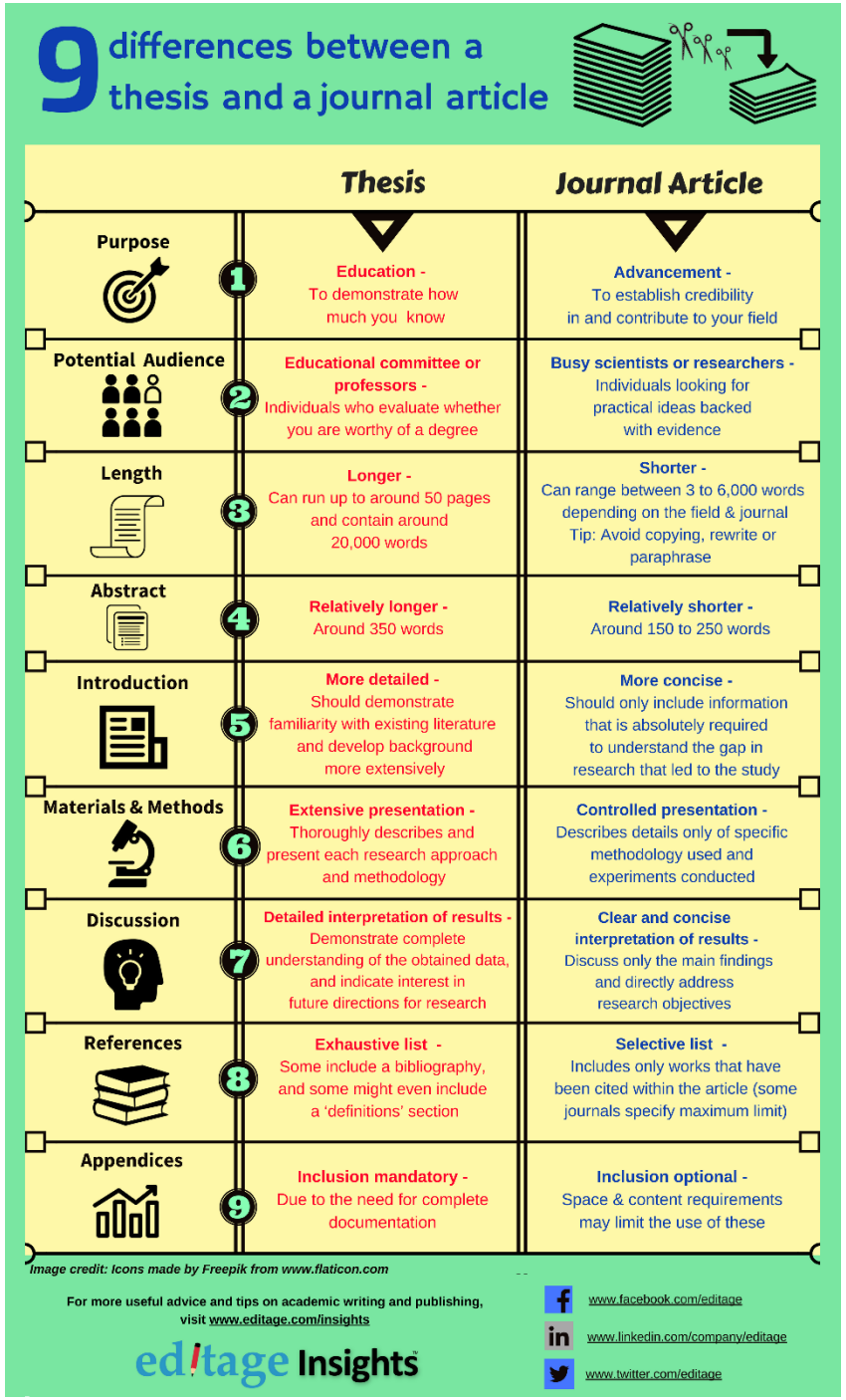

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Getting Started with writing – make an OUTLINE

- OUTLINE

- The purpose of an outline is to divide the writing of the entire THESIS PROPOSAL into a number of smaller tasks HINT: organize by CHAPTERS, which the goal of turning EACH chapter into a publishable paper.

- A good outline will organize the various topics and arguments in logical form. By ordering the topics you will identify, before writing the THESIS, any gaps that might exist.

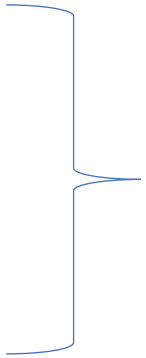
Part II. 8 Steps to make an Outline

Remember, at this stage, you are only constructing an outline. You are not writing; you just need to put down some notes to guide your thinking.

1. Develop a central message of EACH PUBLISHABLE CHAPTER of the THESIS

Prepare a central message sentence (20-25 words). If you were asked to summarize your paper in one sentence, what would you say? Everything in the manuscript will be written to support this central message.

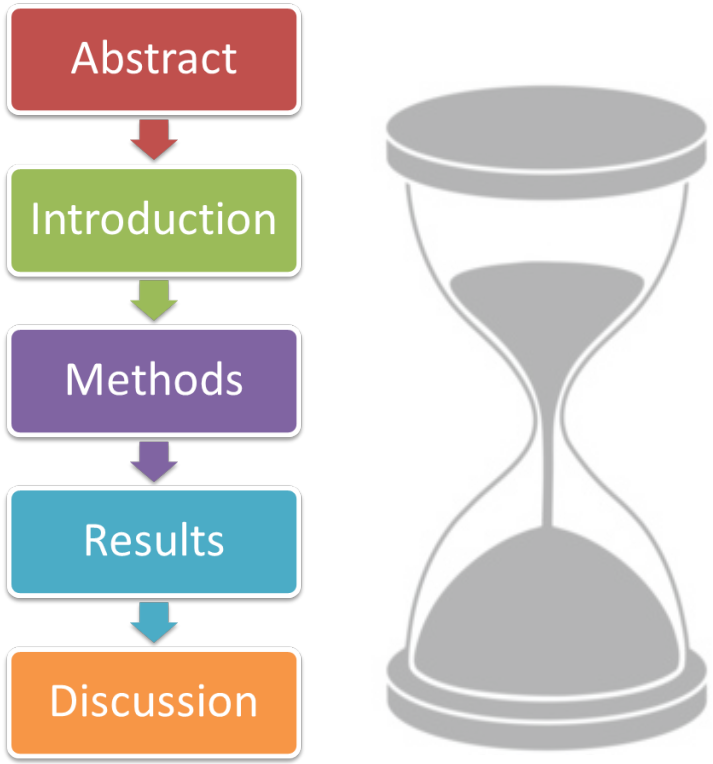
I. INTRODUCTION
II. Future PAPER 1
III. Future PAPER 2
IV. Future PAPER 3
V. DISCUSSION/SYNTHESIS



PhD Dissertation

How to structure each PUBLISHABLE Thesis Chapter

- IMRAD



8 Steps to make an Outline

2. Define the materials and methods

For biology papers/reports, briefly state the **population** in which you worked, and for chemistry and biology papers describe the **sampling method** you employed, the **materials** you used, and most importantly, the **methods** you used to carry out the study.

3. Summarize the question(s) and problem(s)

What was known before you started the study? What answers were needed to address the problem(s)? List the key points pertaining

4. Define the principal findings and results

Your central message sentence probably encapsulates the most important findings. There may be others that you feel ought to be included. List these in note form. Don't worry about the order or about how many you put down.

8 Steps to make an Outline

5. Describe the conclusions and implications

Make brief notes on each of the implications that arise from your study. What are the principal conclusions of your findings? What is new in your work and why does it matter? What are the limitations and the implications of your results? Are there any changes in practice, approaches or techniques that you would recommend?

6. Organize and group related ideas together

List each key point separately. Key points can be arranged chronologically, by order of importance or by some other pattern. The organizing scheme should be clear and well structured. You can use a cluster map, an issue tree, numbering, or some other organizational structure.

Identify the important details, describe the principal findings, and provide your analysis and conclusions that contribute to each key point. → **7. Identify the references that pertain to each key point**

8 Steps to make an Outline

8. Develop the introduction

Before beginning on the introduction, read through the notes you have made so far in your outline. Read them through and see whether there is a coherent and cohesive story and a unifying theme that runs through the outline.

Your introduction outline should start with the main message , describe what the purpose or objective of your study was, how you went about doing the study, what you found and what are the implications of what you found.

Recommendations on how to approach a THESES

1. Prepare the figures and tables.
2. Write the methods.
3. Write the results.
4. Write the discussion.
5. Write a clear conclusion.
6. Write a compelling introduction.
7. Write the abstract.
8. Select keywords for indexing.
9. Write the acknowledgements.
10. Write the references.

Part III. 12 Steps to drafting your 1st Draft

- You should now have detailed notes you can use to write your THESIS

At this point you will need to convert your notes and outline into narrative form. Some people recommend that you begin with the Introduction and continue in order through each section of the paper to help ensure flow. Others suggest that you begin with the easiest sections, which are usually the Methods and Results, followed by the Discussion, Conclusion, Introduction, References and Title, leaving the Abstract until the end. It doesn't matter where you start, the main thing is to begin writing and begin filling up the blank screen or piece of paper.

1. Consolidate all the information. Ensure you have everything you need to write efficiently, i.e., all data, references, drafts of tables and figures, etc.

12 Steps to drafting your 1st Draft

3. Write quickly.

Don't worry about words, spelling or punctuation at all at this stage, just ideas. Keep going. Leave gaps if necessary. Try to write quickly, to keep the flow going. Use abbreviations and leave space for words that do not come to mind immediately.

4. Write in your own voice.

Expressing yourself in your own way will help you to say what you mean more precisely. It will be easier for your reader if they can “hear” your voice.

12 Steps to drafting your 1st Draft

5. Write without editing

Don't try to get it right the first time. Resist the temptation to edit as you go. Otherwise, you will tend to get stuck and waste time. If you try to write and edit at the same time, you will do neither well.

6. Keep to the plan of your outline.

Use the headings from your outline to focus what you want to say. If you find yourself wandering from the point, stop and move on to the next topic in the outline

7. Write the paper in parts.

Don't attempt to write the whole manuscript at once, instead, treat each section as a mini essay. Look at your notes, think about the goal of that particular section and what you want to accomplish and say.

.

12 Steps to drafting your 1st Draft

8. Put the first draft aside.

Put aside your first draft for at least one day. The idea of waiting a day or more is to allow you to "be" another person. It is difficult to proofread and edit your own work; a day or more between creation and critique helps.

12 Steps to drafting your 1st Draft

9. Revise it.

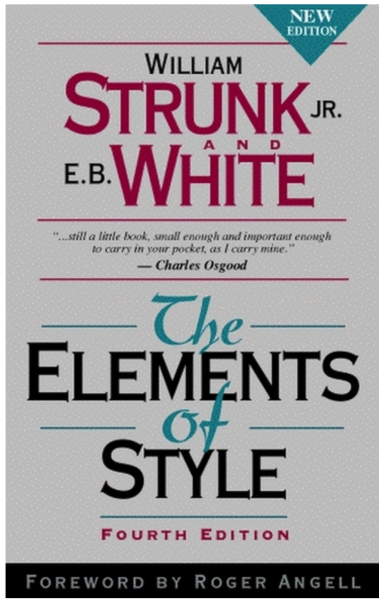
Revise it and be prepared to do this several times until you feel it is not possible to improve it further. The objective is to look at your work not as its author, but as a respectful but stern critic. Does each sentence make sense? In your longer sentences, can you keep track of the subject at hand? Do your longer paragraphs follow a single idea, or can they be broken into smaller paragraphs? These are some of the questions you should ask yourself.

12 Steps to drafting your 1st Draft

10. Revise for clarity and brevity.

Revise sentences and paragraphs with special attention to clearness. For maximum readability, most sentences should be about 15- 20 words. For a scientific article, paragraphs of about 150 words in length are considered optimal. Avoid using unnecessary words.

(see Element of Style)



12 Steps to drafting your 1st Draft

11. Be consistent.

Often a manuscript has more than one author and therefore the writing may be shared. However, the style needs to be consistent throughout. The first author must go through the entire manuscript and make any necessary editorial changes before submitting the manuscript to the journal or report to your teacher.

12. Turn it in OR Target a journal.

Turn in your thesis, determine the journal(s) to which you plan to submit each chapter of your manuscript and write your manuscript according to the focus of the targeted journal. The focus may be clearly stated within the journal or may be determined by examining several recent issues of the targeted journal.

- What is the Results section all about?

- The Results section is one of the most important sections of your research paper. Here you present the key findings of your research to your readers.
- While the Introduction presents the research question and the Methods section explains the process for collecting data, the Results section presents the actual data accumulated through experiments.
- Essentially, the Results section, by presenting your findings, answers the question 'What' (just as the Introduction answers the question 'Why' and the Methods section answers the question 'How'). Thus, the Results section plays a critical role in highlighting the significance of a study.

Results Section in a nutshell

- **What is the Expected Results section all about?**

- ***The purpose of the Results section is to present the data obtained after research in an objective, systematic, and concise manner using text supplemented by illustrations.***

- The function of this section is just to state the **expected** findings; interpretations or inferences drawn should not be a part of this section. Therefore, theoretically speaking, this is one of the shortest sections to write; however, it can also be one of the most difficult sections. This is because researchers often find it difficult to restrict themselves to presenting bare facts: they tend to include explanations and inferences that they have drawn from the results. This can make the Results section subjective, unclear, and confusing for readers. Lack of novelty is one of the key reasons for manuscript rejection. Since the Results section showcases the significance or novelty of research, it is crucial that you learn how to write this section effectively.

How to write a great expected results section

- So basically, here's what you should aim to do in the Results section:
- State only the results in a factual manner: save the explanations and comments for the Discussion section
- Use text, tables, and figures to highlight the key findings in an organized manner.
- Make sure that the content in tables and figures is not repeated in text.
- MAKE A TIMELINE
- USE FLOW CHARTS

- Here's a video that explains how you should go about writing the Results section of your manuscript:

https://www.youtube.com/watch?v=pKAJz3eNxbg&feature=emb_title

PRELIMINARY STUDIES

- Include results from any pilot study in the grant proposal:

- *To confirm that your hypotheses have merit.*
- *To demonstrate your expertise and skills.*
- *To show adequate groundwork has been done.*
- *To show that project is feasible.*
- *To demonstrate that you have adequate institutional support.*
- *To evoke faith in your ability to deliver.*

RESEARCH DESIGN & METHODS

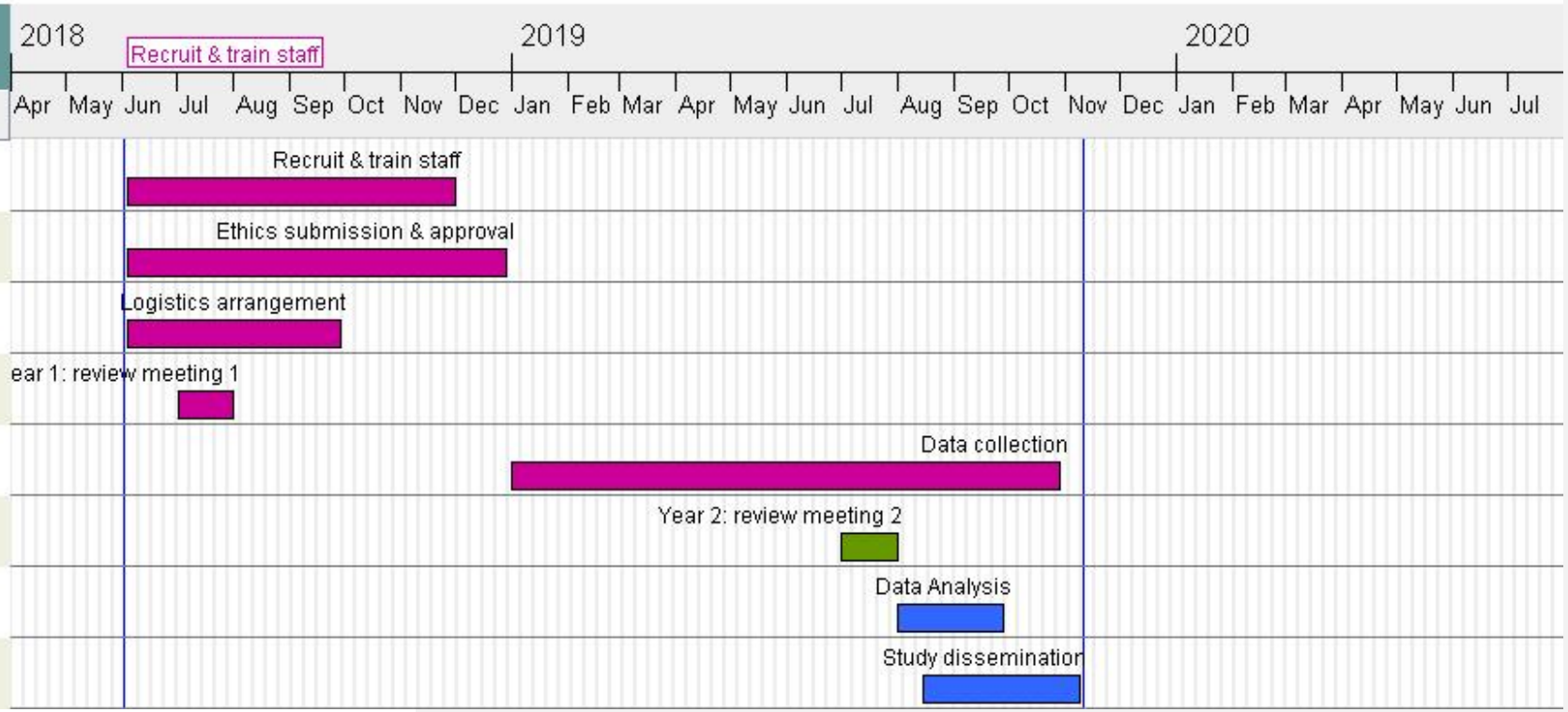
- This section will be carefully reviewed by scientific experts to assess if the methods are adequate to deliver reliable results.

- Provide details of:
  - *ethical review, informed consent (for human participants).*
  - *research design.*
  - *sampling criteria & selection.*
  - *recruitment plan (sites involved, manner of recruitment etc.).*
  - *procedure (instructions, reimbursement, time, location, debriefing etc.).*
  - *measures to be used (test, questionnaires, technical equipment, imaging parameters etc.).*
  - *data management & maintaining confidentiality*
  - *statistical analyses (sample size calculations, variables, software for analyses etc.).*
  - *timeline for the various steps.*

- Can use figures to depict methods and timeline.

Timeline

Name	Begin date	End date
Recruit & train staff	04/06/18	30/11/18
Ethics submissio...	04/06/18	28/12/18
Logistics arrange...	04/06/18	28/09/18
Year 1: review m...	02/07/18	31/07/18
Data collection	01/01/19	28/10/19
Year 2: review m...	01/07/19	31/07/19
Data Analysis	01/08/19	27/09/19
Study disseminati...	15/08/19	08/11/19



Effectively Present Your Expected Results

- The results section answers the question **WHAT** did you find

- State only the results; leave comments and explanations for the discussion section.
  - What are your expected major findings?
  - Answer all points raised in methods.
- Use tables and charts as appropriate, but do not duplicate the data by presenting the same data once as a table and once as a graph or by repeating the graphical data in the text.
  - No mismatch in numbers between text and tables/figures.
- **In theory, this section can be the shortest of the IMRaD sections because a lot of the information can be presented in tables and/or figures.**

When to add tables and figures

Use a table

- To show numerous values or other data in a small space
- To compare values or characteristics among groups
- To show the presence or absence of specific characteristics

When to add tables and figures

Use a figure

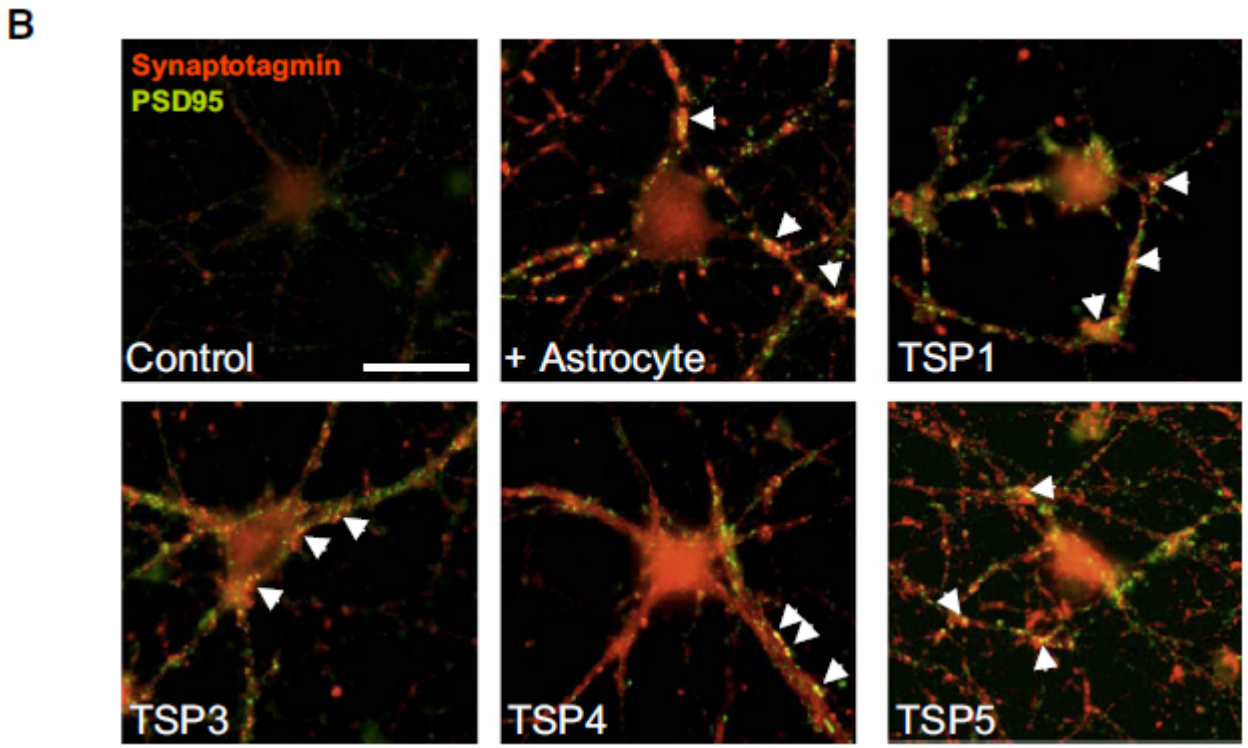
- To show trends, patterns, and relationships in data when the general pattern is more important than the exact values
- To illustrate a sequence of events, procedures, geographical features, or physical characteristics

Figures should be informative and self-explanatory

- Figures offer readers a quick overview of the major study findings.
- Figures help readers better understand the study results.
- Figures should have a **brief** description (a legend), providing the reader **sufficient** information to know how the data were produced.

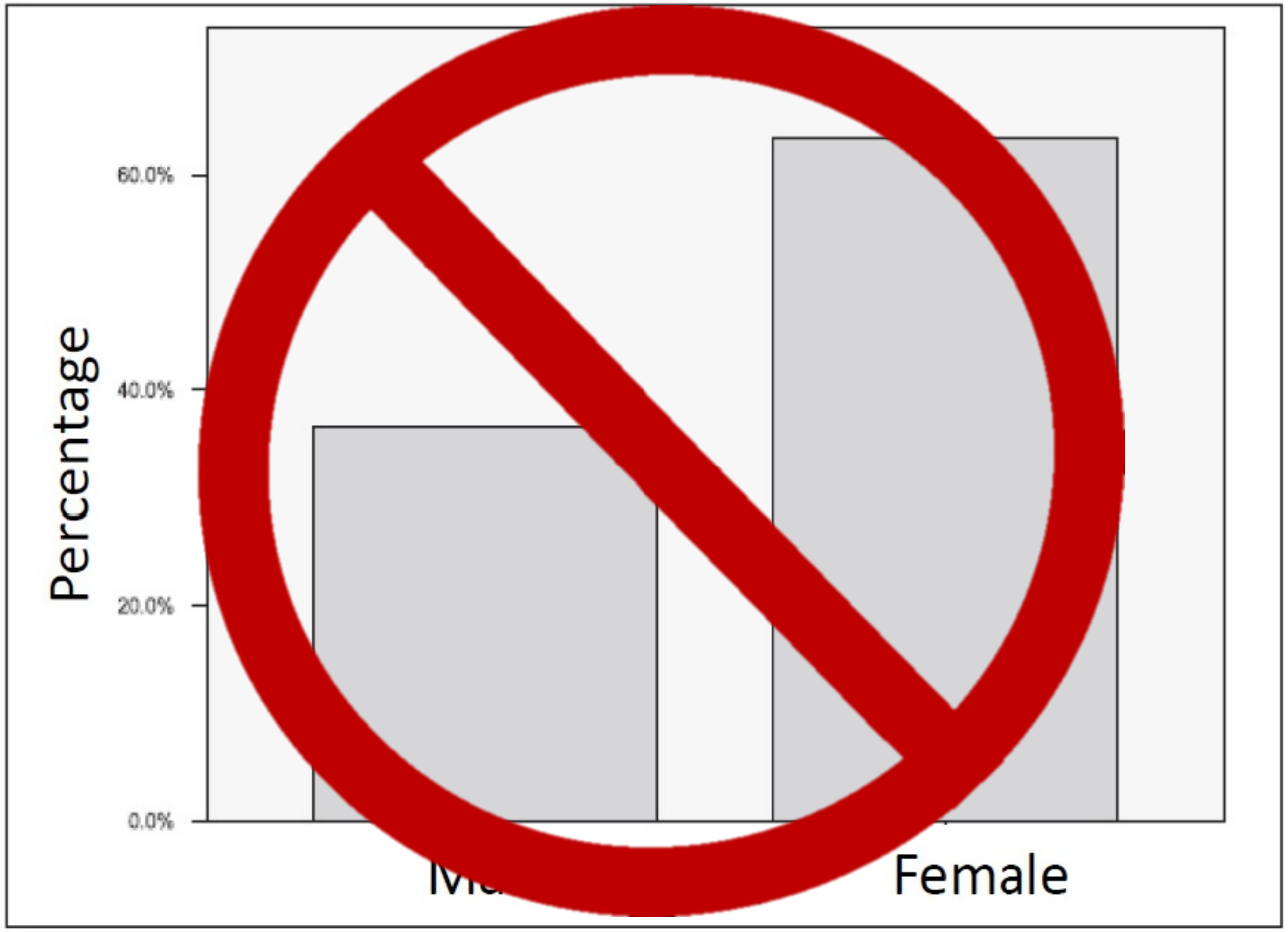
Gabapentin Receptor α2δ-1 Is a Neuronal Thrombospondin Receptor Responsible for Excitatory CNS Synaptogenesis

Çagla Eroglu,[1,2,*] Nicola J. Allen,[2] Michael W. Susman,[2] Nancy A. O'Rourke,[3] Chan Young Park,[2] Engin Özkan,[3,4] Chandrani Chakraborty,[2] Sara B. Mulinyawe,[2] Douglas S. Annis,[5] Andrew D. Huberman,[2] Eric M. Green,[2] Jack Lawler,[6] Ricardo Dolmetsch,[2] K. Christopher Garcia,[3,4] Stephen J. Smith,[3] Z. David Luo,[6,7] Arnon Rosenthal,[8] Deane F. Mosher,[5] and Ben A. Barres[2]
[1]Duke University Medical Center, Cell Biology Department, Durham, NC 27710, USA



(B) Immunostaining of RGCs for synaptotagmin (red) and PSD-95 (green). White arrows point to colocalized synaptic puncta. The scale bar represents 30 μm.

An unnecessary figure



"63.4% were women"

SAGE Open
DOI: 10.1177/2158244011433338

2. How to write a great Results section

Tables and figures – important points

- Include titles and legends as necessary
- Make legends short and precise
- Figures and tables should be able to stand alone
- Never present the same data in tables and figures

2. How to write a great expected Results section

Essential checklist: Results

- State the most important expected results first
- Use journal prescribed format for reporting results, statistics (state your expected sample sizes and planned statistics tests)
- Use tables, e.g. when providing data characteristics, reporting full results for extensive comparisons (p value, confidence intervals, effect size etc. e.g. ANOVA $F_{1,\ 20} = 11.930,\ P = 0.003$)
- Use figures to highlight significant findings and key results that will be discussed further
- Provide table and figure legends to ensure that they are self-sufficient for interpretation

BUDGET

- This section is key to any Dissertation Proposal

Item	Quantity	Cost	Subtotal	Total
Jet Travel				
RDU-Kigali (roundtrip)	1		$6,100	**$6,100**
Maintenance Allowance				
Rwanda	12 months	$1,899	$22,788	**$22,788**
Project Allowance				
Research Assistant/Translator	12 months	$400	$4800	
Transportation within country				
–Phase 1	4 months	$300	$1,200	
–Phase 2	8 months	$1,500	$12,000	
Email	12 months	$60	$720	
Audio cassette tapes	200	$2	$400	
Photographic and slide film	20	$5	$100	
Laptop Computer	1		$2,895	
NUD*IST 4.0 Software			$373	
Etc.				
Total Project Allowance				**$35,238**
Administrative Fee				**$100**
Total				**$65,690**
Sought from other sources				**($15,000)**
Total Grant Request				**$50,690**

BUDGET

- This section may often take more time to plan than anticipated.
- A detailed, verifiable and justifiable list of expenditures should be included in the budget after adequate research/get quotations.
- Ensure that budgeting is done as per funder's instructions and does not exceed maximum allowance.
- In case of international collaborations, determine payment in the context of the country, calculate payment as per current exchange rates, consider modality of payment of personnel, resources and charges involved, e.g. taxes, administration costs, etc.
- Make an exhaustive budget; if funds exceed grant allocation, explain that you will be seeking additional funding from a different source.

BUDGET

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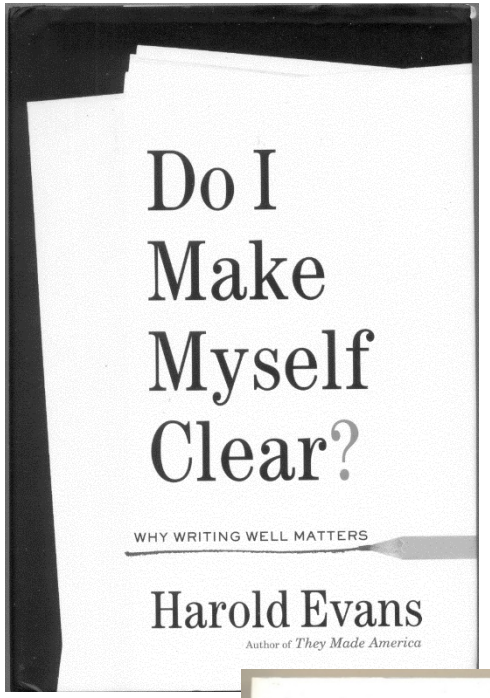

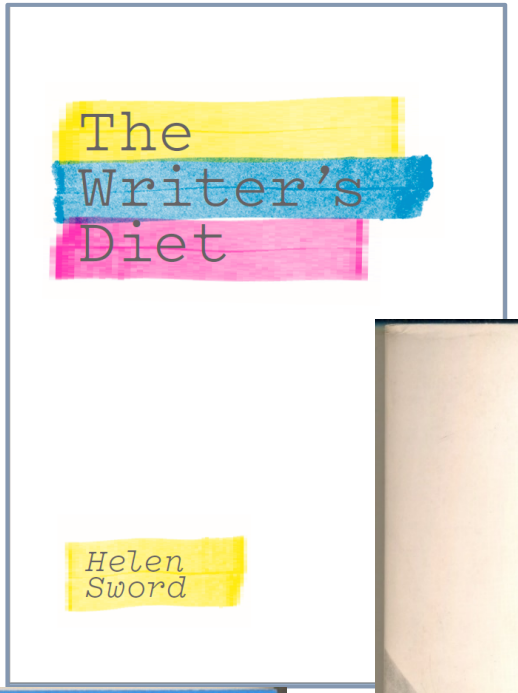

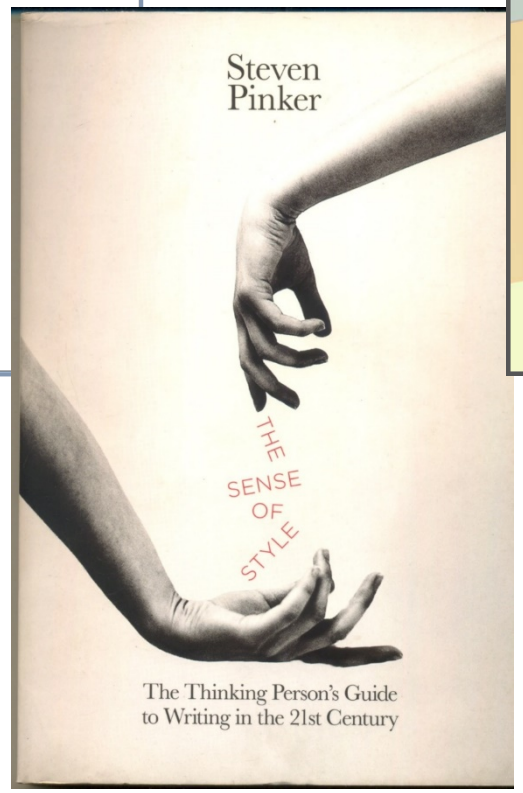

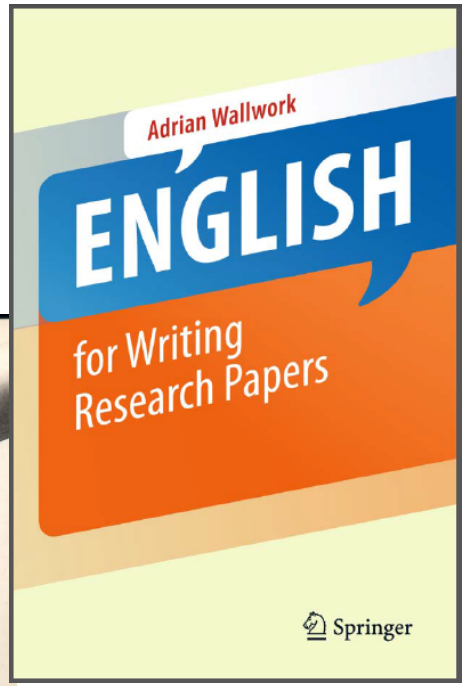

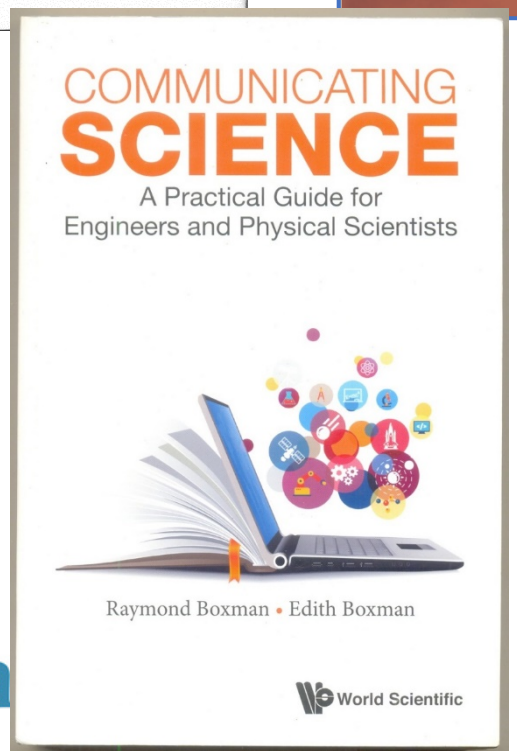

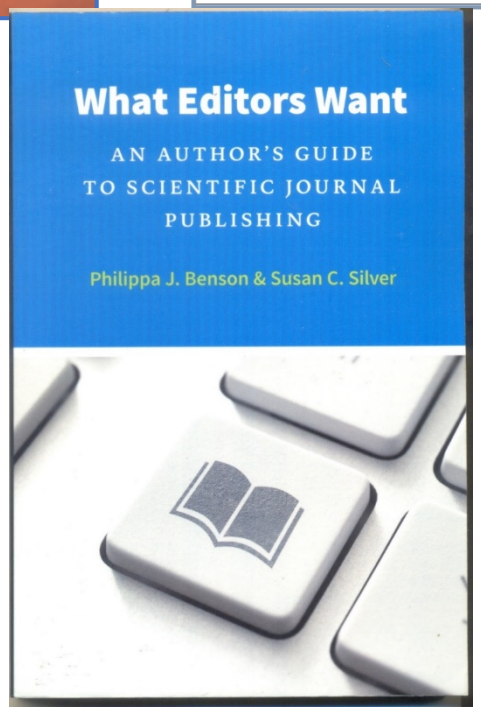

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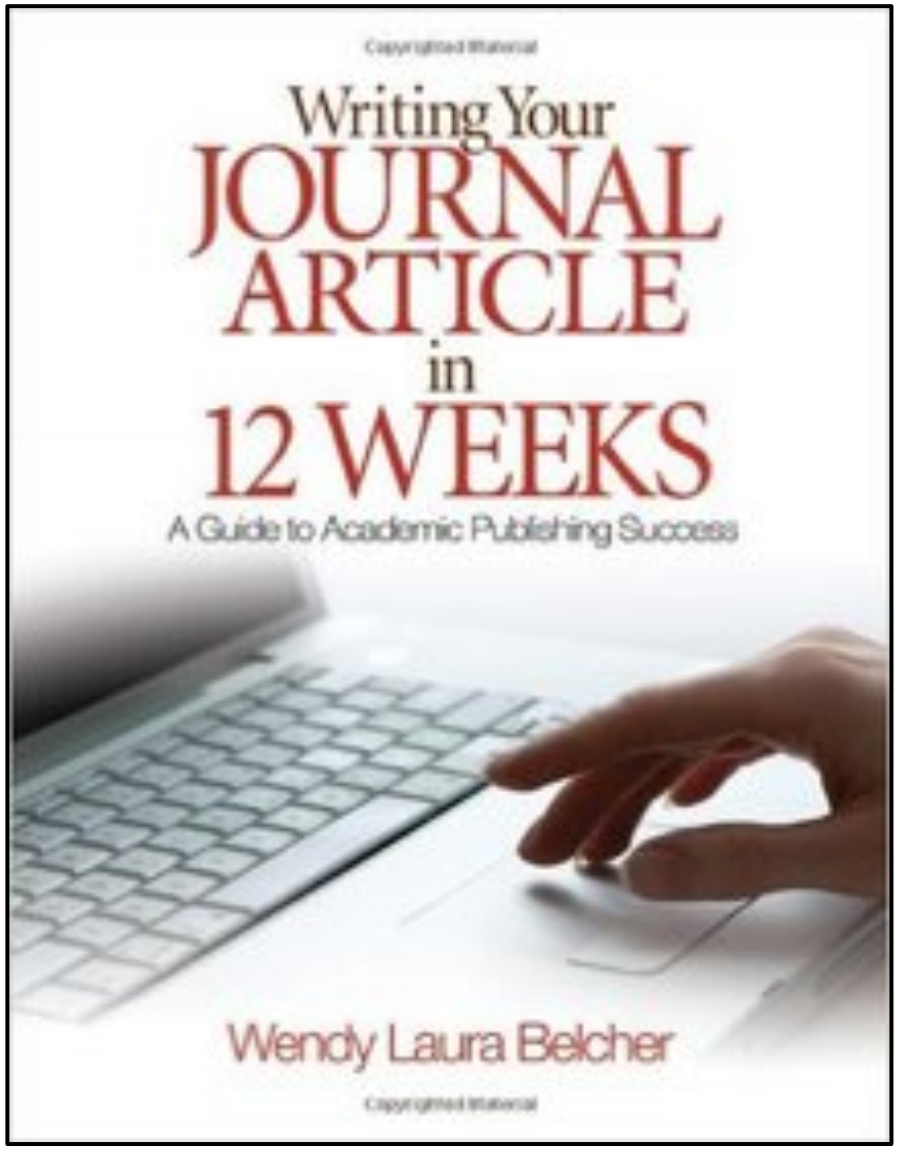

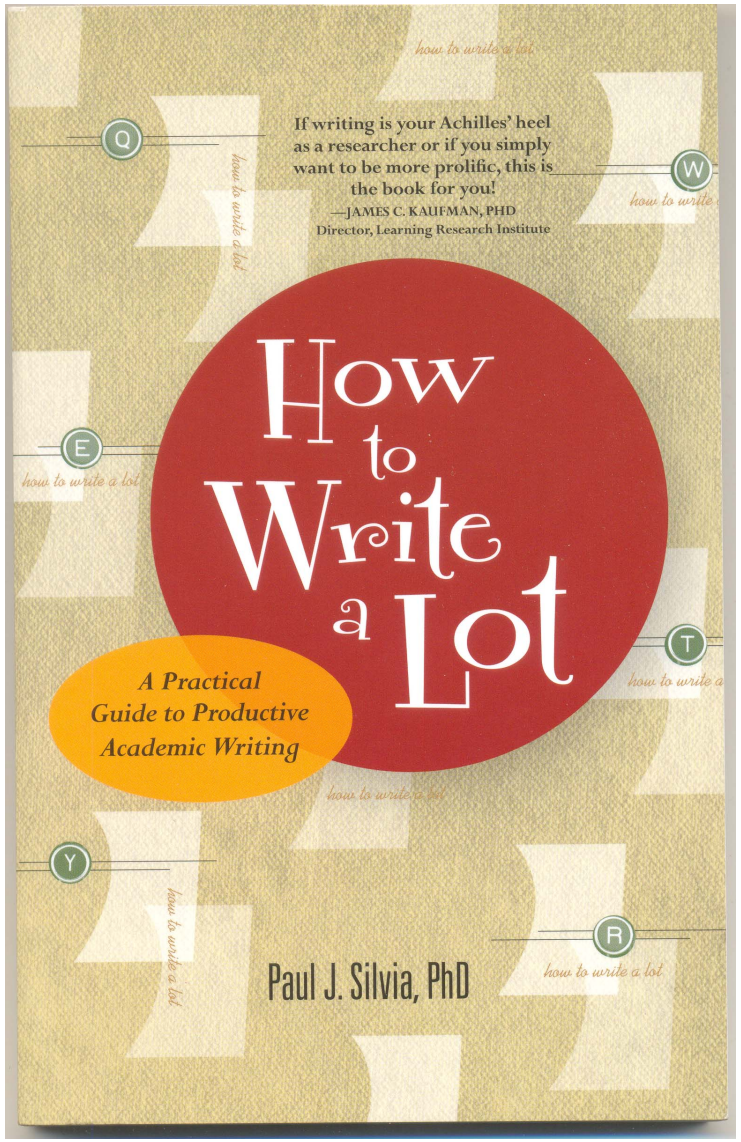

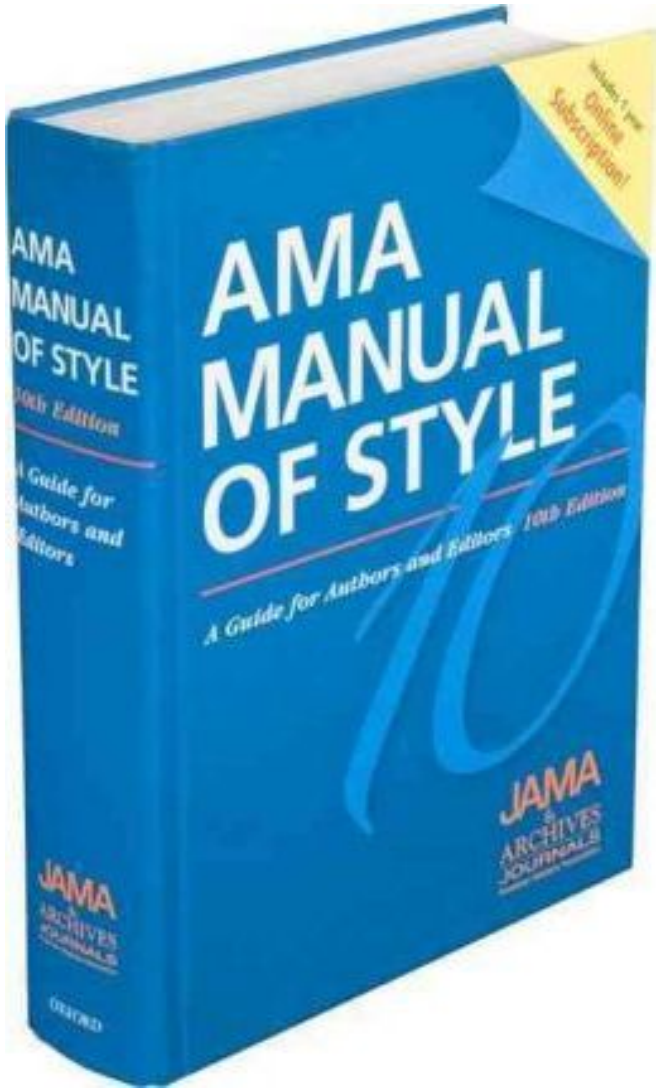

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CV Writing Checklist

Your CV should be job- and employer-specific. Use the following checklist to ensure that yours stands out from the crowd.

Format

- ☐ Don't use more than two or A4 sides, except for those in exceptionally high-level positions where CV might be up to four pages.
- ☐ Maintain plenty of white space. Avoid long paragraphs of text.
- ☐ Use bullet points for ease of reading.
- ☐ Select a clear, easy-to-read font.
- ☐ Be consistent with text alignment.
- ☐ Use bold or italic to draw the reader's eye to key points.
- ☐ Use a preformatted CV template in Microsoft Word.

5. How to Write an Academic CV

- Keep multiple copies of your CV
  - 1. Two-page Biographical Sketch
  - 2. Longer Academic Resume

Biographical Sketch: Jacob D. Wickham

Picture Optional

Current Rank: Assistant Research Professor

Mailing Address: Institute of Zoology
Chinese Academy of Sciences
1 Beichen West Road, Chaoyang District
Beijing 100101 CHINA

Communications: Tel: office: 86-10-6480-7071
Fax: 86-10-6480-7099
Email: jacobwickham@ioz.ac.cn, jacob.wickham@rutgers.edu

(a) Professional Preparation

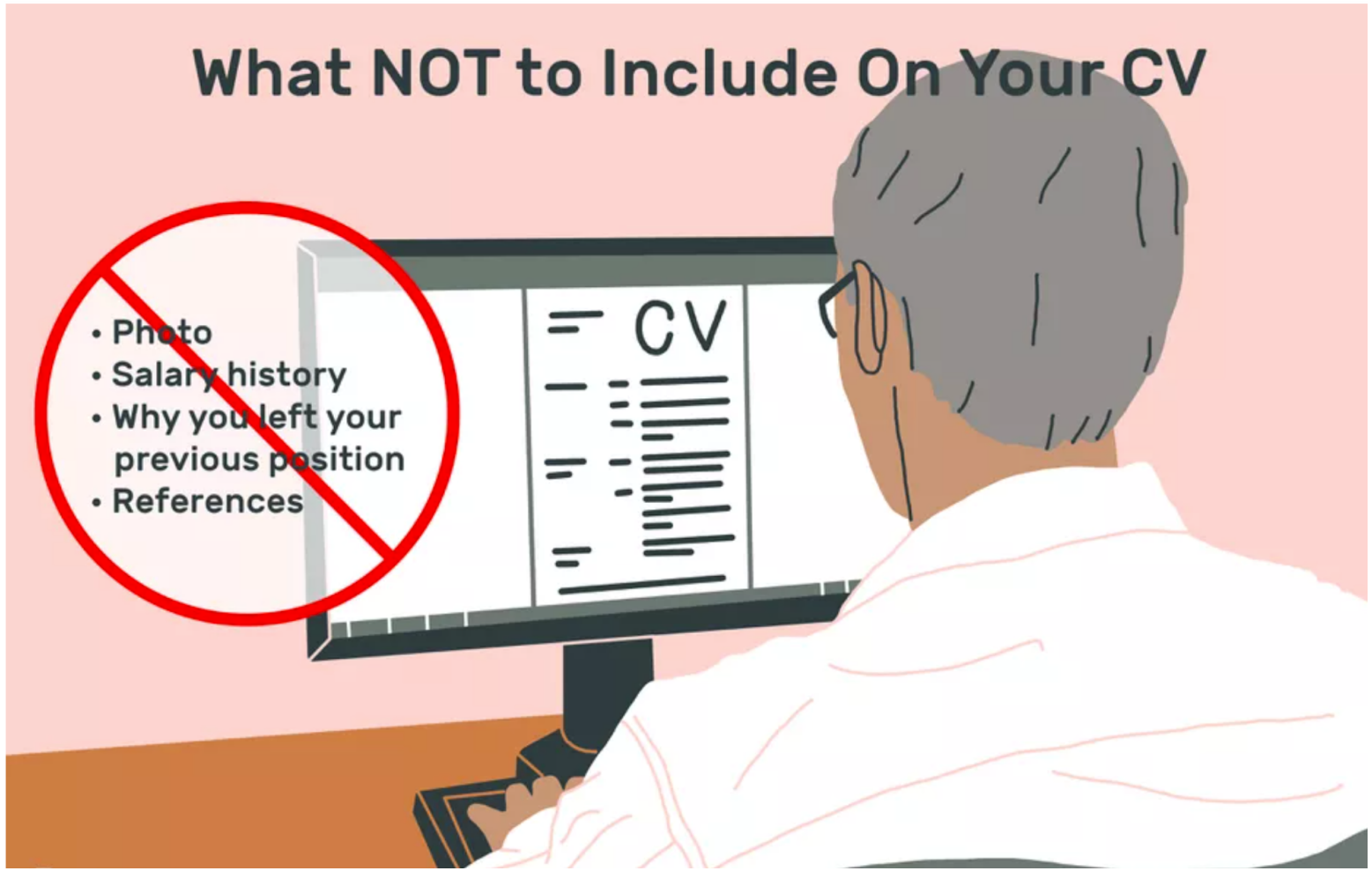
Institution	Major	Degree/Date
State University of New York (SUNY) College at Fredonia	Biology	B.S., 1999
SUNY College at Fredonia	Biology	M.S., 2002
SUNY College of Environmental Science and Forestry	Chemical Ecology	Ph.D. 2009
Institute of Chemistry, Chinese Academy of Sciences	Analytical Chemistry	Postdoc 2010-2013

(b) Fellowships/Appointments Dates

Research Assistant Professor, Institute of Zoology,Chinese Academy of Sciences 2017 – present

Adjunct Professor, Department of Entomology, Rutgers University 2016 – present

What NOT to include on your CV



TMI (too much information)

- Picture is unnecessary
- Salary information is too early (this might be a question for your interview)
- Never state why you left a previous position
- Only list references if it's an absolute requirement. Often this section is written:

References
- Available upon request

https://www.thebalancecareers.com/cv-samples-and-writing-tips-2060349#curriculum-vitae-sample

Style and structure

- ☐ Depending on the job you're applying for, the style can be formal or slightly less so. However, the wording should remain 100% professional.
- ☐ Use high impact, positive words to make for compelling reading.
- ☐ A good CV should flow in logical order: contact details, summary statement, experience starting with your most recent job, education and training.

Contact details

- ☐ Include your phone number, email address, and LinkedIn profile. Ensure that your email address is professional (use an institutional email address if possible).

Cover letter

- ☐ The cover letter is your sales pitch. State why you should be selected for this particular role, with a clear match of your skills to the role applied for.

How to list your Past Experiences

Education and training

(If you are a student, place this section before your employment history.)

- ☐ List your education and training in reverse chronological order.
- ☐ Include all formal education post-secondary school.
- ☐ Detail all certificates, qualifications and additional education.

Experience

- ☐ List your experience/employment history in reverse chronological order.
- ☐ Highlight key responsibilities and accomplishments.
- ☐ Back up your achievements with figures, percentages and data where possible.

"Academic" Sub-sections include

- ☐ Awards and Honors (Fellowships, etc.)
- ☐ Grants
- ☐ Publications
- ☐ Reviewing for Scientific Journals
- ☐ Presentations, lectures, and exhibitions
- ☐ Teaching
- ☐ Outreach

Example of Academic sub-section

Reviewer - International Journals (n = 19 journals)

Ecology
Journal of Chromatography A
Integrative Zoology
Canadian Journal of Forestry
PLoS ONE
Journal of Chemical Ecology
ISME Communications
Oecologia
Insect Science
Insects
The Canadian Entomologist
Environmental Entomology
Journal of Pest Science
Naturwissenshaften,
Frontiers in Ecology and Environment
Journal of Chromatography A
International Journal of Pest Management
Bulletin of Entomological Research
Journal of Economic Entomology

Keywords

- ☐ Many employers use computerised systems to sift through CVs during the initial application stage. Include industry-/company-/job-relevant keywords and phrases to ensure that yours passes these tracking systems to move onto the next stage. Learn how with CV Assistant.

Proofread

- ☐ Spelling and grammar checks are essential. Get several people to read over your CV to be 100% sure that everything is correct.

Thank you

Jacob D. Wickham

www.editage.com

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