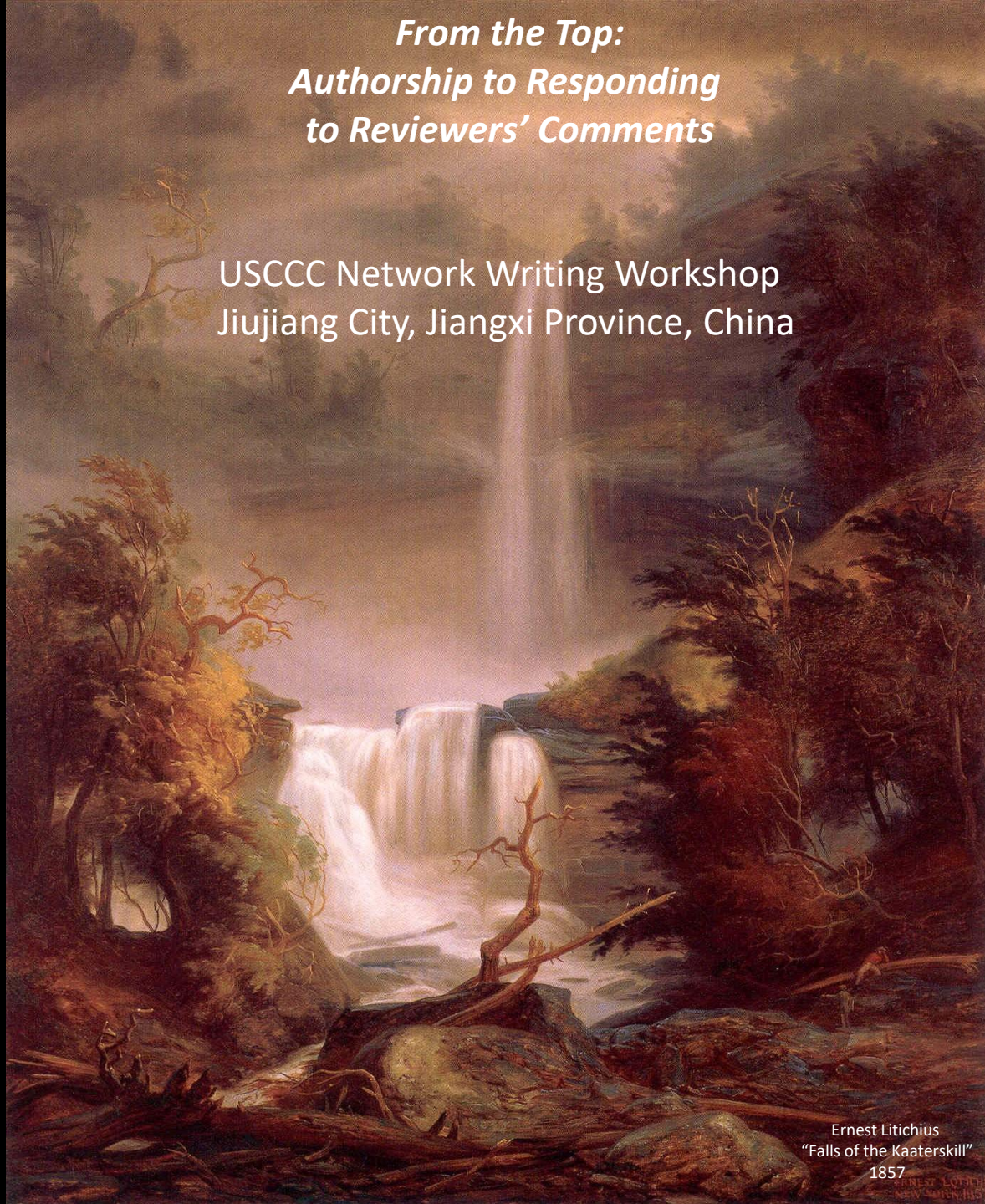


*From the Top:
Authorship to Responding
to Reviewers' Comments*

USCCC Network Writing Workshop
Jiujiang City, Jiangxi Province, China

Dr. Kathleen C. Weathers
G. Evelyn Hutchinson Chair in Ecology
Senior Scientist
Cary Institute of Ecosystem Studies
New York, USA



Ernest Litichius
"Falls of the Kaaterskill"
1857

From the Top:

Authorship to Responding to Reviewers' Comments

- Authorship
- Responsibilities as authors
- Manuscript structure and styles
- Use of conceptual frameworks and key figures/tables to guide writing
- Responding to reviews

Authorship denotes intellectual investment and involvement

“...Institutions, funding agencies, and researchers assess scientists in light of their publications...”

After P.D. Magnus, Michael Kalichman



Iterative near-term ecological forecasting: Needs, opportunities, and challenges

Michael C. Dietze^{a,1}, Andrew Fox^b, Lindsay M. Beck-Johnson^c, Julio L. Betancourt^d, Mevin B. Hooten^{e,f,g}, Catherine S. Jarnevich^h, Timothy H. Keittⁱ, Melissa A. Kenney^j, Christine M. Laney^k, Laurel G. Larsen^l, Henry W. Loescher^{k,m}, Claire K. Lurch^k, Bryan C. Pijanowskiⁿ, James T. Randerson^o, Emily K. Read^p, Andrew T. Tredennick^{q,r}, Rodrigo Vargas^s, Kathleen C. Weathers^t, and Ethan P. White^{u,v,w}

Edited by Monica G. Turner, University of Wisconsin–Madison, Madison, WI, and approved December 29, 2017 (received for review

Authorship

Talk about potential papers (titles) and authors
– Early and often

Team Meeting June 2015, updated Oct 2015:

What (title keywords): carbon model, mass balance, net heterotrophy

Who: GLEON Fellows, PCII, KCW + others

Which Data: Literature C fluxes

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Ethical Obligations of Authors

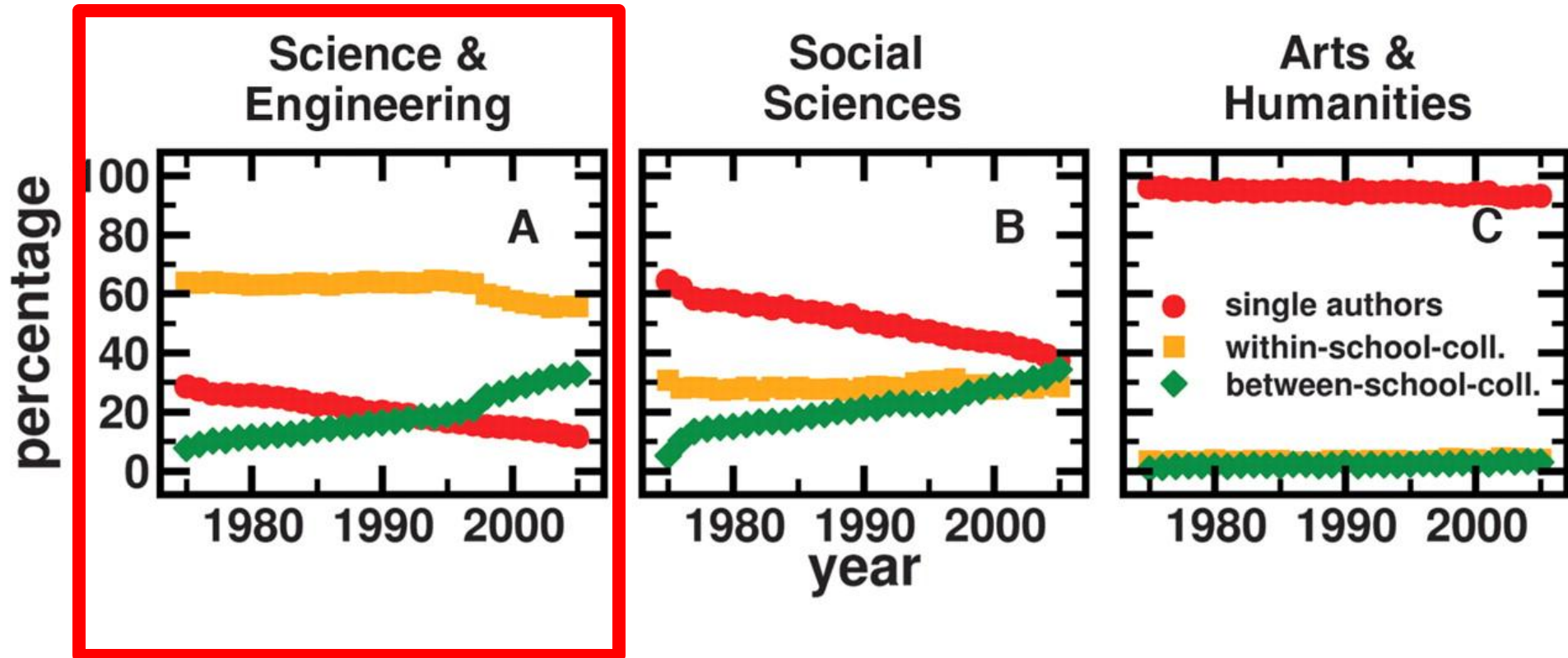
- Present precise and accurate account of research
- Give clear, objective discussion of its significance
- Sufficient detail, well referenced
 - work can be repeated
- Cite influential sources of information and publications; guide reader quickly to relevant primary, essential, and earlier work
- Carefully document methodology, assumptions, and uncertainty

Ethical Obligations of Authors

- **Never plagiarize** the work of **others or your own work**. Always provide appropriate citation.
- **Avoid** unnecessary fragmentation or **redundant publication** of research reports **to artificially increase the number of publications**.
- **Never include personal criticism** in a written piece of work.
- **Include as coauthors: significant contributors** to the work.
- All coauthors share **responsibility for quality and integrity of the work**.

Multiple Authors is the Norm

4.2million Papers Published Over 30 Year Period:



Source: Jones et al. 2008, Science

Co-Authorship

(from CNH-Lakes guidelines—Virginia Tech University)

- Most research and papers are collaborative
- Be proactive and inclusive; communicate
 - identify manuscripts expected from research activities; notify other team members when new manuscript opportunities arise
 - upon initiation of a manuscript, the lead author(s)
 - contact all team members to identify potential co-authors *who wish to be actively involved* in manuscript development
 - co-authors work with the lead author(s)
 - track contributions to the manuscript
 - throughout the research activity

Examples of Co-Authorship Contributions

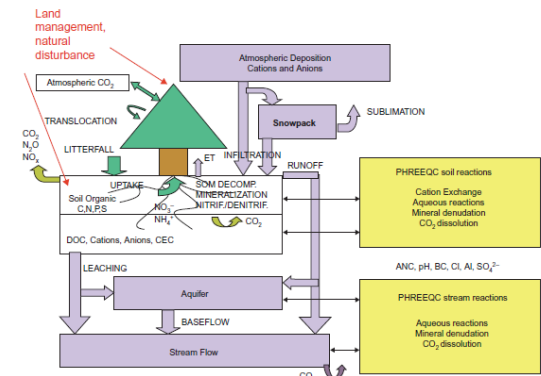
Concept and Design Contributions

1. Conceived or contributed to conception of manuscript idea/overarching topic; input helped define fundamental contribution of manuscript
2. Developed or fundamentally contributed to formulating research questions
3. Designed/outlined the manuscript
4. Contributed to the conceptual/theoretical framework for the manuscript
5. Supervised and/or co-supervised authors and manuscript progress
6. Provided platform for research interactions to occur

Examples of Co-Authorship Contributions

Research Contributions

1. Collected data
2. Compiled or synthesized data (e.g., merged data from different datasets for model activities)
3. Oversaw or led quality assurance/quality control (QA/QC) of data
4. Developed models or a part of a model
5. Calibrated models
6. Ran or estimated models
7. Integrated models
8. Developed model scenarios
9. Analyzed observed data or model output data
10. Contributed new analyses or methods
11. Interpreted results or placed results in a policy context to enhance the greater contributions of a project



Source: Weathers et al. 2013

Examples of Co-Authorship Contributions

Examples of Writing Contributions

1. Wrote sections of text
2. Designed figures and tables
3. Performed critical reviews or substantial re-working of manuscript



Make sure to include author contribution statement: Example

Author Contributions: We make no distinction in effort and contribution between the first and second authors or between the third and fourth authors. HAE and KCW were responsible for project design, oversight, data analysis, synthesis, and writing. PHT analyzed N samples and contributed significantly to interpretation of data. TED established the initial tree physiology study site, provided and analyzed the data on tree physiology, and contributed to the synthesis of these data. MKF first identified the lack of connection between inputs and microbial processing and catalyzed synthesis regarding belowground processing. AME created figures, performed field and laboratory work, and was database manager. VKSB collected field samples and carried out the litterfall study. All authors edited the paper.

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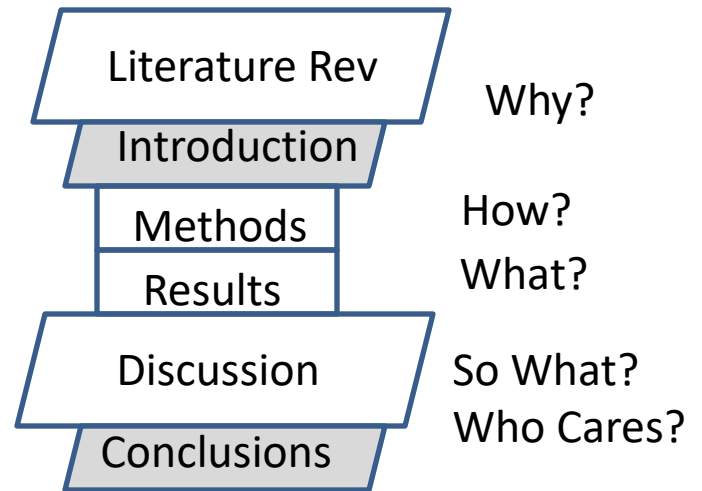
Why write a scientific paper?

- Add new knowledge
- Communicate findings
- Make a point
- “Deliverable” of funding or support

Structure of a Scientific Paper

- Abstract
- Introduction
- Methods
- Results
- Discussion
- Acknowledgments
- References
- Supplementary Material

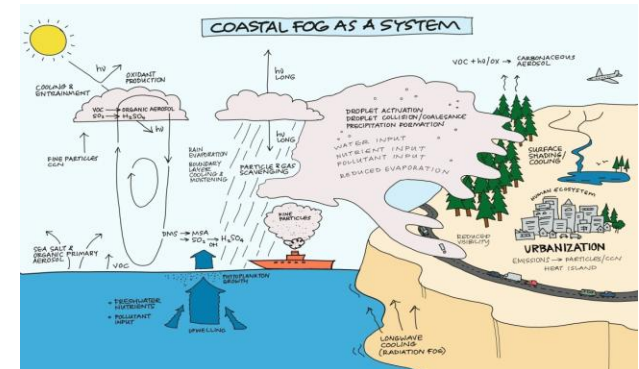
- Title tells it all!



Adapted from: K. Shiva Rama Prasad

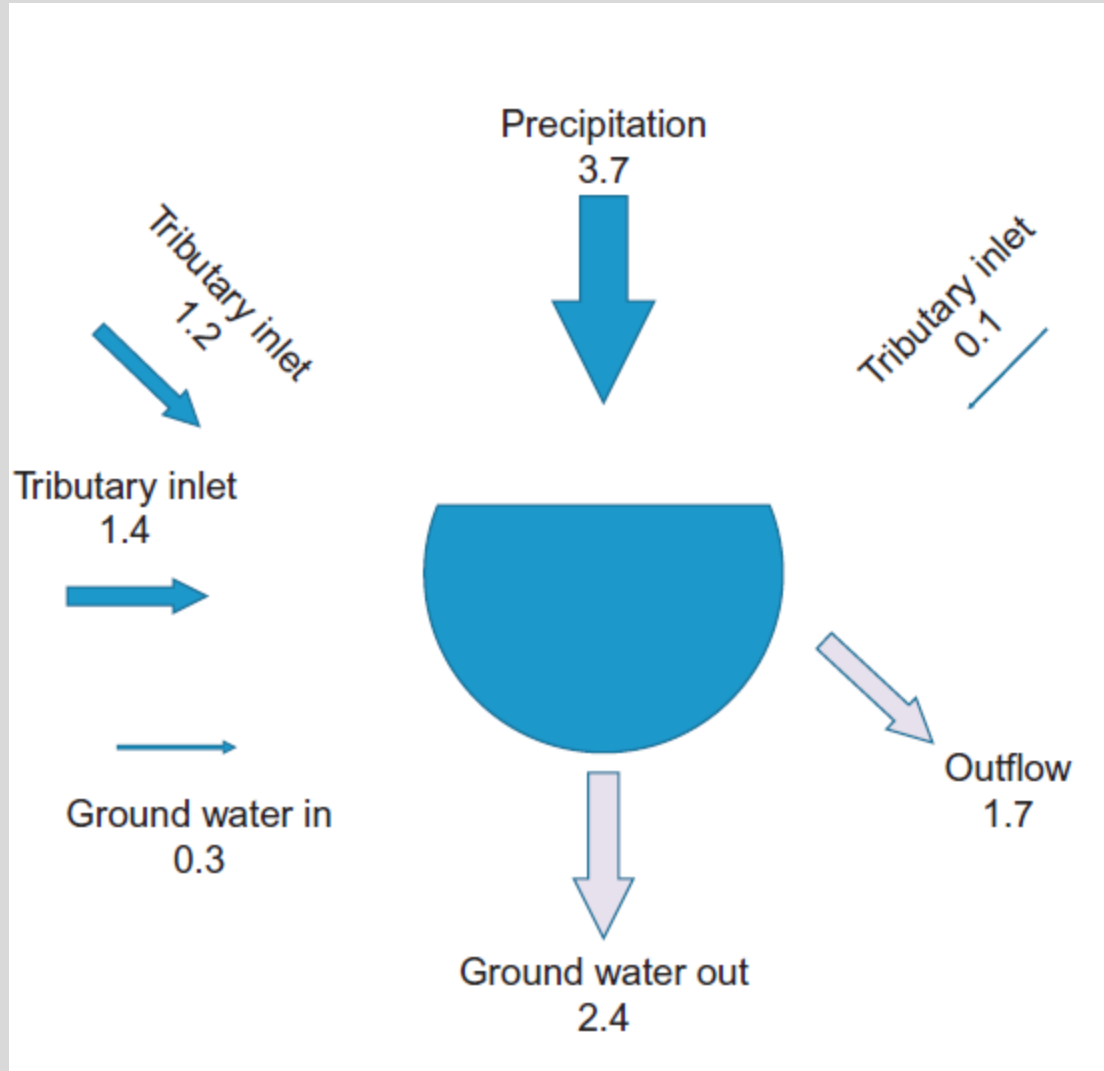
Conceptual Models

- Put in context what is known and not known
- Define/refine your question(s)
- Guide your writing



Weathers et al 2014
Piso, O'Rourke, Weathers 2016

Annual Phosphorus Inputs and Outputs to Mirror Lake, NH USA (kg/ha)



Pathways of Impact of Pests and Pathogens on Forest Ecosystem Processes

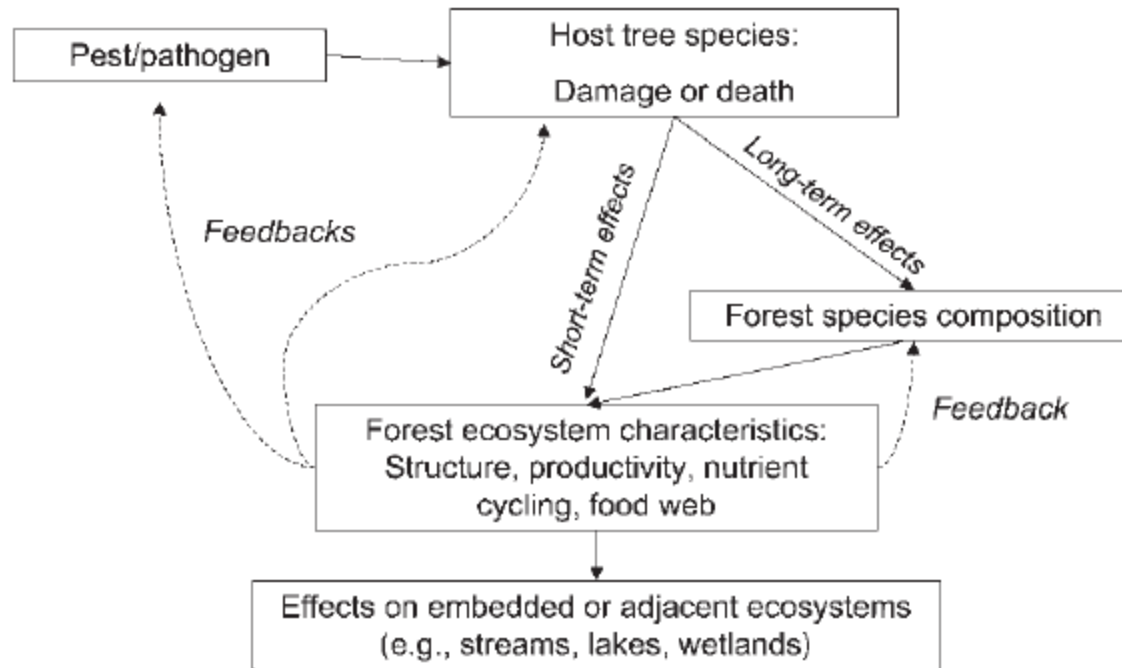
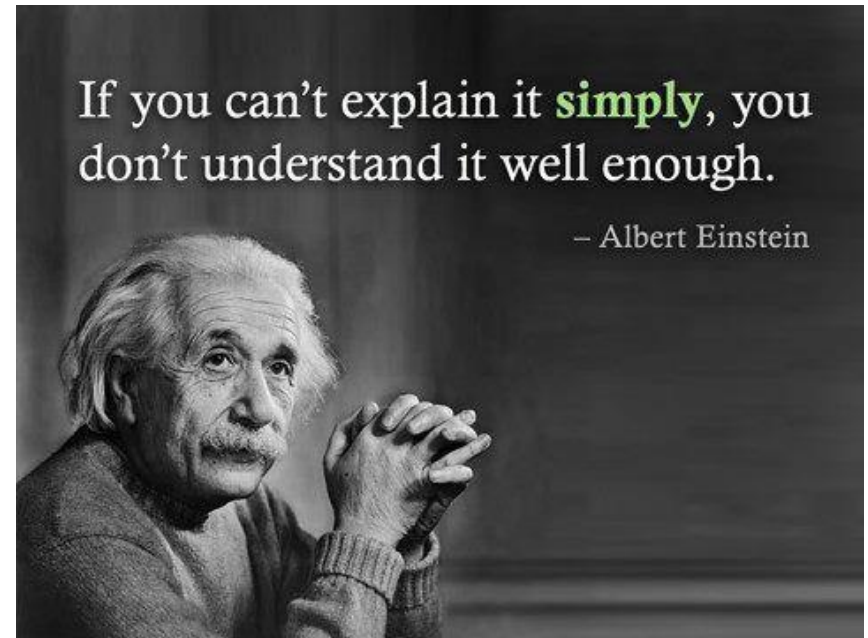


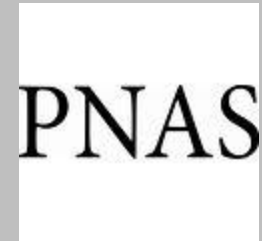
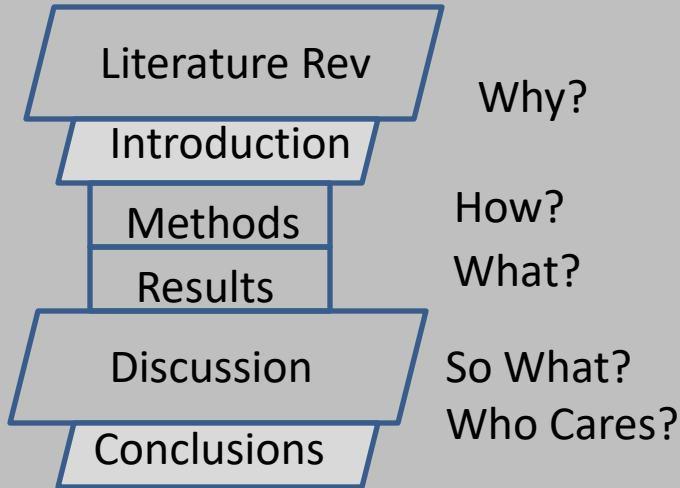
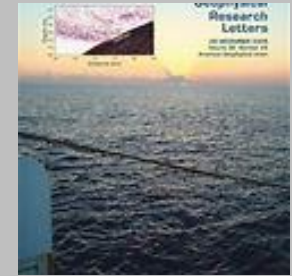
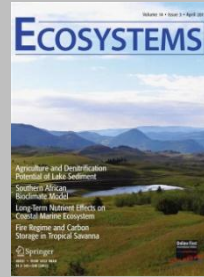
Figure 1. Pathways of impact of pests and pathogens on forest ecosystem processes. Ecosystem characteristics can be affected by the direct, short-term action of the pest or pathogen on the tree—for instance, defoliation or mortality. Longer-term effects are caused by pest-induced changes in forest species composition, which then produce changes in ecosystem processes. These ecosystem characteristics can feed back to affect the pests (e.g., increased nitrogen availability can increase the survival of phytophagous insects), the trees (e.g., increased light availability from tree death may improve the condition of the survivors), or the forest composition (e.g., increased light, water, and nutrients may change the relative competitiveness of different tree species).

Papers:

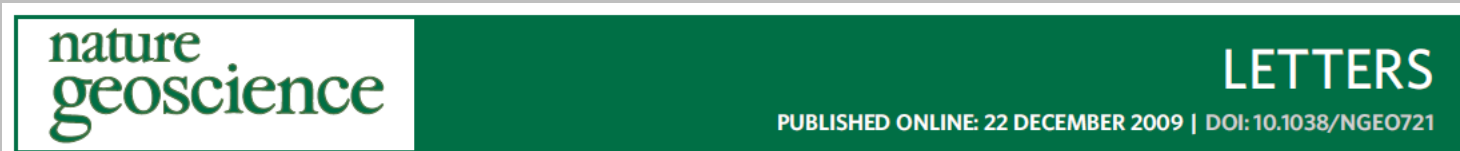
Should be clearly written,
easy to understand

- Omit needless words (excessive hedging, ineffectual phrases)
- Prefer simple words
- Use simple subjects





www.nature.com/scientificdata



Introduction (present tense)

- Frame the paper
- Include information relevant to your study
 - Background leading to the importance of your study
 - Justification of this study
 - Why conduct the study?
 - Where does it fit with previous research
 - Very brief highlights of your results and conclusions

Methods (past tense)

- Be precise
- Enough information to replicate the study
- But, avoid excessive detail
- Be sure to include information on how you collected and analyzed/synthesized data
 - Where, what, how collected data
 - What software, R packages used
 - Make sure to note anything that may affect results
 - Exclusion of data, assumptions of homogeneity, etc.

Results (past tense)

- Report what you found
 - Keep results and discussion separate
 - Do not interpret results
- Do not exclude results
 - Even if they contradict

Discussion (present tense)

Most important section!

- Do not repeat results: address what they mean
- What did you expect?
- Were there surprises or did the results support your initial argument?
- How do these results compare to other studies?
- What are next steps, based on what you found?
- Make the distinction between facts and possibilities

Figures and Tables

- Story line: information around which paper is written
- MUST include enough information in legend so that if figures are separated from paper, can still interpret
- Clear and compelling
- Not too many, or too few
 - 3-5 Figures
 - 2-3 Tables

Tables

- Large, complicated data sets
 - Difficult to explain in text

Variable	Coefficient	<i>P</i>	Partial r^2	Model r^2
Acadia National Park, ACAD				
a) Statistical model parameters				
Intercept	0.98720			
Elevation (m)	0.00265	<0.0001	0.212	0.212
Conifer presence	-0.03922	0.8676	0.105	0.317
Tree dbh (cm)	0.01521	0.0098	0.019	0.336
Elevation × conifer pres.	0.00482	0.0003	0.031	0.367
b) Mapping equation parameters				
Intercept	1.60345			
Elevation (m)	0.00263	0.0193	0.171	0.171
Conifer presence	-0.03248	0.9061	0.080	0.251
Mixed forest presence	0.48995	0.0380	0.018	0.269
Distance to coast (m)	-0.00015	0.0399	0.006	0.275
Elevation × conifer pres.	0.00481	0.0008	0.032	0.307
Great Smoky Mountains National Park, GRSM				
c) Statistical model parameters				
Intercept	3.32326			
(Elevation) ²	0.000001995	<0.0001	0.322	0.322
Elevation (m)	-0.00427	<0.0001	0.096	0.418
Conifer presence	-0.15380	0.6113	0.044	0.416
Slope (from DEM)	0.01106	0.0250	0.007	0.468
Elevation × conifer pres.	0.000648	0.0070	0.008	0.479
d) Mapping equation parameters				
Intercept	3.69836			
(Elevation) ²	0.000002195	<0.0001	0.331	0.331
Elevation (m)	-0.00464	<0.0001	0.125	0.455
Conifer presence	-0.26948	0.3737	0.044	0.499
Elevation × conifer pres.	0.000748	0.0030	0.014	0.513

Figures

- Can be very powerful
- Visual relationships

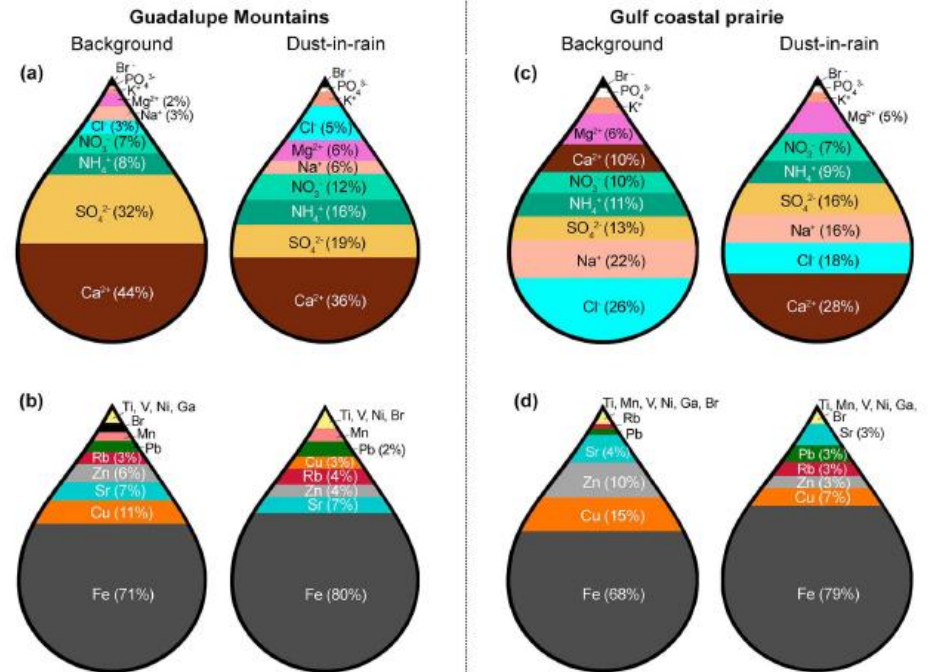
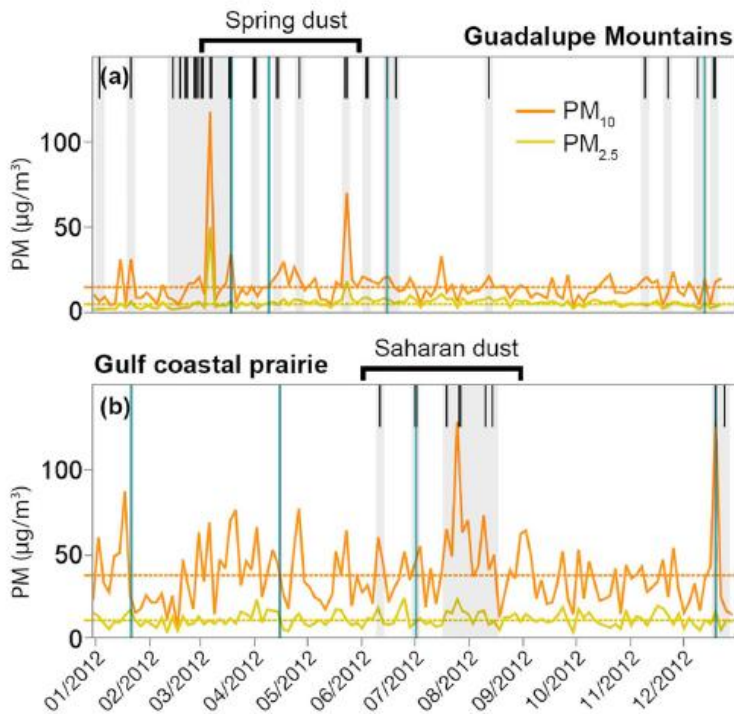


Figure 5. Changes in the relative contribution (%) scaled to raindrop of dissolved ions to the chemical composition and of proton-induced X-ray emission-detected elements to the particulate composition of rainwater during 2012 dust-in-rain events at the focal National Atmospheric Deposition Program sites in the (a, b) arid Chihuahuan Desert (Guadalupe Mountains National Park Frijole Ranger Station, TX22) and (c, d) humid Gulf Coastal Plain (Attwater Prairie Chicken National Wildlife Refuge, TX10), Texas.

Suggestion: Order for Writing a Paper

- Title, Journal, Authors, Conceptual diagram
- Final Figures and Tables
- Results and Discussion
- Methods
- Introduction
- Abstract



The evolution of writing

- What do I want to say?
 - Title!
 - Journal
 - What do the data say?
 - What should be left out/what's missing
 - Is it all there?
- What do I want to say?



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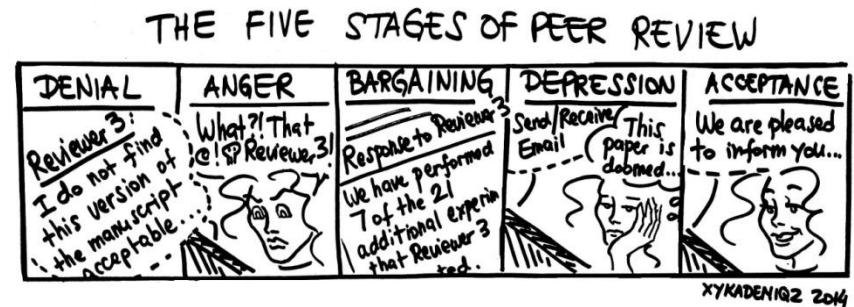
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- Manuscript structure and styles
- Use of conceptual frameworks and key figures/tables to guide writing
- Submission and responding to reviews

Submission to a Journal

- Make sure to follow journal guidelines, exactly
- Submit only proofread, quality manuscripts
- Cover letter to editor
 - Short and to the point: how does this work advance science and why appropriate for journal
- Identify any potential conflicts-of-interest
- Corresponding author
 - ensure coauthors agree to the final version of the manuscript
- Respond promptly to journal

Peer Review

- Accept as is (RARE!)
- Accept with minor edits
- Accept with major edits
- Reject
 - Improve and resubmit!



Responding to Reviews

- Must consider every point
- Write detailed response
- Remember: Reviews improve manuscripts



25-Sep-2017

Dear Dr. Weathers:

Thank you very much for submitting your manuscript "Assessing the effectiveness of landsat 8 chlorophyll-a retrieval algorithms for regional freshwater monitoring" EAP17-0385 (Articles)

to Ecological Applications. The reviewers and I appreciate the work you have accomplished.

We are willing to consider a revised version for publication in the journal, assuming that **you are able to modify the manuscript according to the recommendations.**

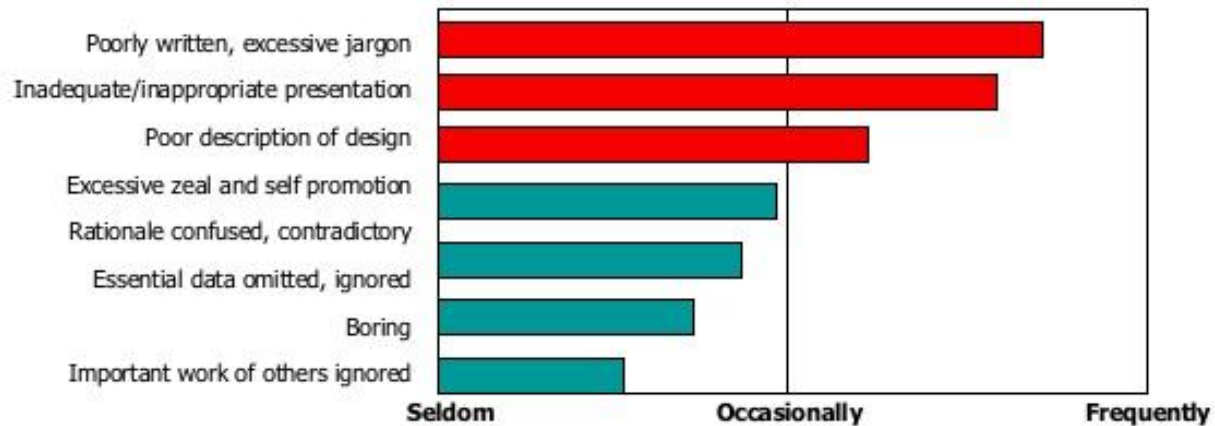
Your revisions should address the specific points made by each reviewer, **some of which are quite substantive.**

Common manuscript problems



Scientific writing

Common manuscript problems



Byrne DW, Publishing Medical Research Papers, Williams and Wilkins, 1998



Dr. K. Shiva Rama Prasad, at <http://www.technoayurveda.com/>

Exercise

- Draw a conceptual model for your system
- Highlight your focus
 - Share it with 5 neighbors for feedback