# Steps prior to writing a paper

Have a story to tell…

# Where to start?

1. Results
   - Do not publish just to publish
   - Negative results can be published, wrong results not!

2. Figures

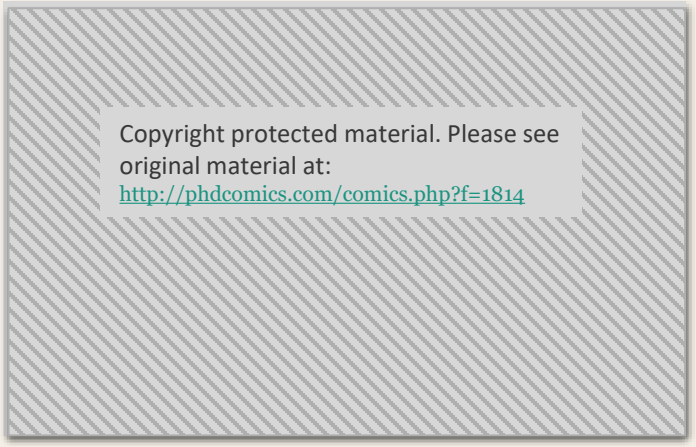




Figure 1: …

Figure 2:…

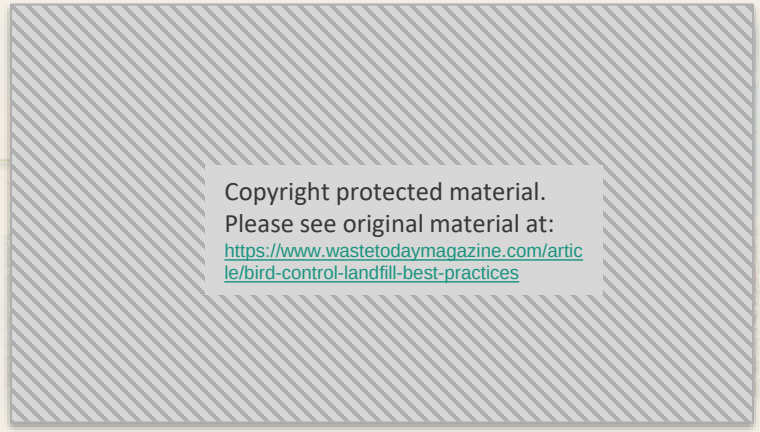
3. Structure of the paper: titles & subtitles

4. Discuss with supervisors & co-authors – make a plan

5. Read journal's guide for authors

(e.g., https://www.elsevier.com/journals/learning-and-instruction/0959-4752/guide-for-authors)

# Article's structure and content




- Title
  - Short & attractive

➡ Which title is concise but also includes sufficient information to make the paper stand out?

1. Characterization of a landfill using geophysical data
2. Characterization of a heterogeneous landfill using geophysical data
3. Characterization of a heterogeneous landfill using seismic and electrical resistivity data
4. Characterization of a heterogenous landfill using seismic and electrical geophysical data.

Vote now!

# Article's structure and content

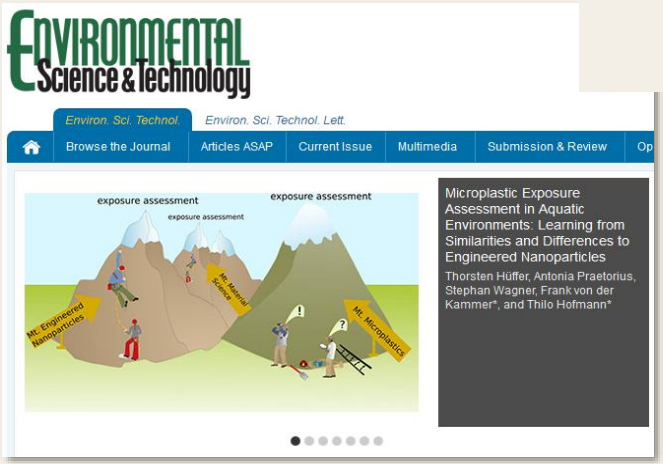
- Authors – Affiliation
  - Who should be your co-author? Who should be the first author?
    (e.g., https://www.psi.ch/integrity/dokumente)
  - Use correct affiliation (incl. present address)

- Keywords
  - General words (e.g., landfills)
  - Specific to your research (e.g., MASW)

- Highlights
  - Short sentences which describe the main findings and motivation of your research

# Article's structure and content

- Abstract
  - Attract the interest of the reader, do not simply summarize your study
  - Three main components:
    a) What is the problem and what is the focus of your paper?
    b) What are the main methods you used?
    c) What are the results? - Simply mention them with no explanation
- Graphical abstract
  - An innovative figure to get the interest of the reader



# Article's structure and content

- Introduction. You can fill in several paragraphs by answering the following questions:
  - What is the problem? Explain in detail and use specific phrases to make your point clear.
    - «There is an increasing need to...»
    - «It is critical to understand the...»
  - What has been done till now and why is this not enough (gap)?
  - Provide clear objectives of your article. Explain why your paper is innovative.
    - «The objectives were to investigate the following:...»
    - «The first goal of our paper is...»
  - In the end, shortly summarize the content of your paper.



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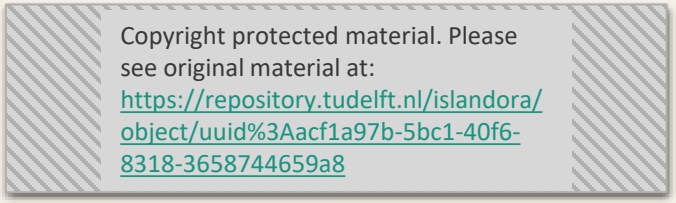
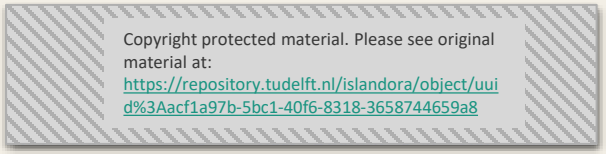
# Article's structure and content

- Main body
  - Laboratory/field measurements, theory, models, results
  - Explain your measurement (theory/model), procedure (parameters) chronologically
  - Add information such as time & place




  - Describe the figures – be specific in both the main text and the figure caption





  - Provide a detailed description – do not assume things are self-explanatory

# Article's structure and content

- Discussion
  - Yes or no? Vote now!
  - Criticism of your own work can help in the reviewing process
  - Opportunity to point out other applications of your work
  - Do not refer to future work you will do
  - Do talk about the difficulties you had, but only if you are already planning a way to solve them.
    - «There were difficulties in...»
    - «The results will be much better if...»
  - Helps to connect with your next article:
    - «In Konstantaki, et al., 2014 we found that...The goal of this paper is to further investigate....»

# Article's structure and content

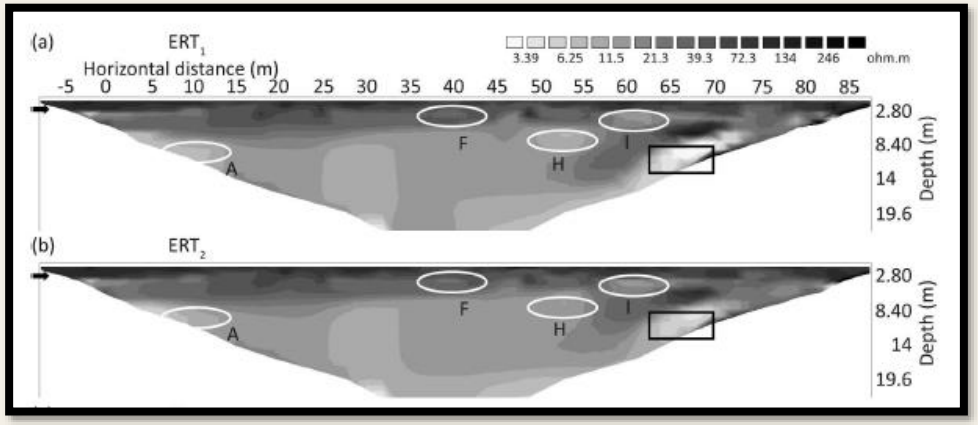
- Conclusions
  - Short & precise
    - «We studied the...»
    - «We investigated the potential...»

If the discussion is thorough, the conclusions can be as short as a paragraph

- Acknowledgements
  - funding
  - software
  - help
- References
  - Use a reference management software
    - which one do you use? Vote now!
  - Do not cite just to cite
  - Avoid too many self-citations
  - Read the papers you cite

# Article's structure and content

- Figures
  - Follow the instructions in the authors' guide
  - When using figures from other authors, check the copyright (Webinar 3)
  - Compare same things
  - Be careful with the color scale




Picture from: Kontantaki, 2016. Doctoral Thesis

# Journal Article vs Review Article

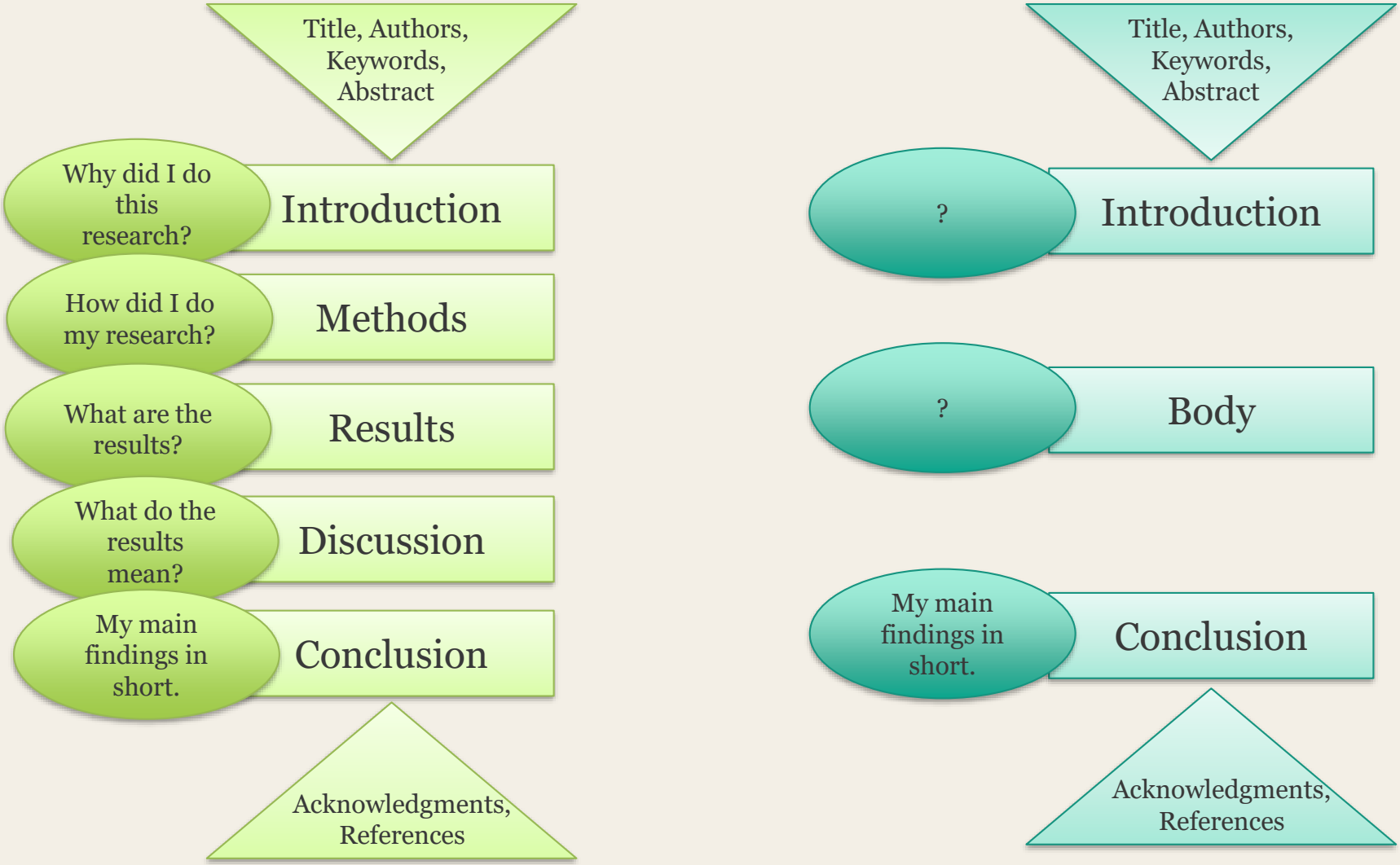
# What is a Review Article?

- Usually it does not present new research
- Summary and critical evaluation of another already published article
- Not just an opinion, but a scientific proof of your evaluation of that article

Useful links:

- https://link.springer.com/article/10.1007/s11747-017-0563-4
- https://writing.colostate.edu/guides/page.cfm?pageid=1534&guideid=79
- http://ueberfachliche-kompetenzen.ethz.ch/dopraedi/pdfs/Mayer/guidelines_review_article.pdf

# Journal Article vs Review Article



# Review article's structure and content

## Introduction

- State your topic, summarize the article you review and clearly explain your purpose of writing this review.
- Explain why your review is important for the scientific community.
- Explicitly mention your objectives, main idea and goal of this review.

## Body

- Think of it as a "large" discussion part of one of your own articles.
- Do not just summarize the results of the paper, but analyse, critically evaluate and interpret them.
- Create subsections, with specific steps and arguments that will lead to your final conclusion.
- Keep in mind the main idea you stated in the introduction and come back to this through your explanations.

# Exercise 1 – at home

- Describe your research in one or two sentences (elevator pitch)

Some good examples:

https://graduateschool.nd.edu/assets/76988/elevator_pitch_8_28_2012.pdf

https://academicpositions.be/career-advice/how-to-write-an-elevator-pitch

# Thank you!

Dr. Laura Konstantaki

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The example sentences presented in this presentation appear in the publications of: Konstantaki et al., 2016, Geophysics, 81,EN75-EN86; Konstantaki et al., 2015, Geophysics, 80, EN13-EN25; Konstantaki et al., 2015, Journal of Applied Geophysics, 122, 28-39.; Konstantaki et al., 2013, Geophyscis, 78, EN107-EN116; Konstantaki, 2016, Doctoral Thesis.