

Sections of a Manuscript

- Title Page
- Abstract (Summary)
- Introduction
- Materials and Methods
- Results – sometimes combined with Discussion
- Discussion
- Literature Cited or References
- Figure Legend(s)
- Table(s)

What is an abstract?



stetsonhatchat.blogspot.com

- An abstract describes the problem and summarizes the major points of the research.
- Some people will only read the abstract and not the whole paper.
- Many people find it easier to write last after the rest of the rest of the paper has been written.

In general...

- Authors may assume that the reader has some general knowledge of the field
- Short papers and brief notes may not require an abstract
 - But the Agricultural Experiment Station might anyway
 - Abstracting journals also require an abstract

Two Types of Abstracts



hrfuture.net

1) Abstract for a manuscript

Contains information about the study, methods results and discussion (usually importance) – very informative

2) Abstract for a meeting

Like the manuscript abstract, it contains the same elements, but lacks the details, especially specific data

Importance of the Abstract

It is the first “real” writing that the editor/reviewers read in the manuscript or grant

Often, the editor/reviewers will form an opinion of your work based solely on the abstract

It must be interesting, capture the attention of the ‘reviewers and therefore must be informative and well-written



Ingredients for a good Abstract

The problem being investigated (may be combined with the subject of the investigation)

The objectives/aims of the investigation

How the investigation was performed

What were the results of the investigation

What is/are the most important conclusion(s) or impact(s) of the study



thecouponhigh.net

An Abstract Must...

- Conform to the style of the journal
- Consist of complete sentences
- Be informative
- Be brief (Generally- there are exceptions)
 - 200-250 words
 - 3% of the total length of the text
- Be self-contained, self-explanatory, and intelligible without having to refer to anything else (except maybe the title)
- It stands alone and does not refer to figures and tables in the manuscript and rarely if ever contains literature citations



oumedicine.com

The abstract should be a miniature version your paper – the reader should be able to get the main points of the paper, but not the details

GOOD OPENING TOPIC SENTENCE



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Flowering dogwood (*Cornus florida*) populations recently have experienced severe declines caused by dogwood anthracnose.

Informs reader of the following:

- Common and scientific name of plant in the study
- Populations of the have suffered severe declines because of disease -- This is the PROBLEM

Amplifying or Supporting Sentences for the Topic Sentence



facweb.cs.depaul.edu

Mortality has ranged from 48 to 98%, raising the concern that genetic diversity has been reduced significantly.

Focuses the topic of loss of genetic diversity of the species

Next sentence provides the **Materials and Methods**

Microsatellite data were used to evaluate the level and distribution of **genetic variation** throughout much of the native range of the tree.



The Heart of the Manuscript – The Results

Genetic variation in areas affected by anthracnose was as high as or higher than areas without die-offs. We found evidence of four widespread, spatially contiguous genetic clusters. However, there was little relationship between geographic distance and genetic difference.



matthewferry.com

Three simple, **declarative** sentences tells the reader the basic message (findings) in the paper. This should entice the reader to continue reading the paper.

What Does It Mean? Discussion

These observations suggest that high dispersal rates and large effective population sizes have so far prevented rapid loss of **genetic diversity**. The effects of anthracnose on demography and community structure are likely to be far more consequential than short-term genetic effects.

Give your readership the general ideas – there is no reason to provide exhaustive details. Try to capture the interest of the reader with simple ideas that would compel them to explore the manuscript in more depth.



Conclusions

An abstract is like the jacket cover of a book. It contains a brief synopsis of the paper that entices the reader to read the entire paper

All sections of the paper are represented in a good abstract

Journal abstracts **NEVER** contain the phrase “**will be discussed**”

Abstracts are typically only one paragraph in length

Abstracts must “stand alone”, not refer to figures and tables in the manuscript, and must never contain literature citations

There are exceptions to the above list

Conclusions

wiki.brown.edu

Key Words



Usually three-to-seven words or phrases that describe the content of the manuscript

Cannot (usually) repeat words that appear in the title

May or may not be in alphabetical order

Generally, not too important as most abstracting services and databases searches now use words from titles of papers and author's names.

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Parts of a Paper – The Introduction

- The purpose of the introduction is to orient the reader and place the study in proper perspective. It may be labeled with a heading or not, according to the format of the journal.
- It takes the reader by the hand and sets the stage for what follows.



Introduction - Organization

The **nature** and **scope** of the problem being should be presented. Obviously the reader may have understood the general idea of the paper from the title, but you should be very clear here. This is the most important “rule” of writing the Introduction. Nature and scope in this case is taken to mean the entire Introduction.

Day and Gasstel, 2006



Introduction – Organization



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- Should **BRIEFLY** “review the literature to orient the reader.” Be careful here as much of the verbiage and literature citations may be used in the discussion.
- The **METHOD** used to conduct the investigation should be included. You may elaborate on the methods: why it was used, how it has been used in previous similar situations/investigations.

Introduction – Organization



sbs.com.au

- “It should state the **principal results** of the investigation.”
- “It should state the **principal conclusions** suggested by the results.”

Day and Gastel, 2006)

Disagree with Day and Gastel: The abstract, if written correctly, will have already stated the points listed above. Most readers only read the last paragraph of the Introduction first – they may read the entire Introduction later.

Parts of a Paper – The Introduction



m.ibosocial.com

- Keep it short and to the point.
- This is the place to define any specialized terms or abbreviations that you intend to use.
- Do not give a long historical review of literature. Select only enough literature to accomplish the purpose of the introduction.
- The reader usually is not prepared to integrate details of past studies at the beginning of a paper, so a detailed literature review is dull and not meaningful at this point.
- Save the analyses of literature for the discussion section where it can be effectively connected to your findings.

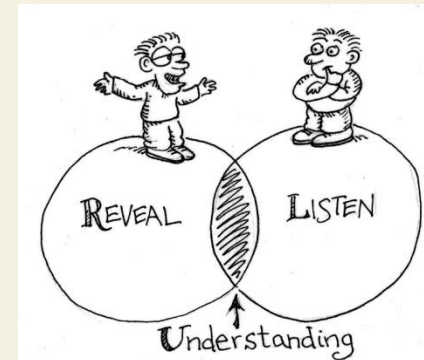
- Use the present tense to write about the motivation and justification for doing the research

“Poultry waste is the fastest growing environmental challenge facing the South (USA)”
- Review of relevant literature is written
 - in past tense (“Studies showed that...)
 - or present perfect (“Studies have shown that...)
- Past tense is used for the objective



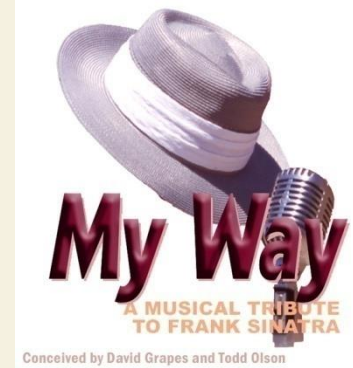
Parts of a Paper – The Introduction

- Try to excite and interest the reader, but do not promise more than the paper will deliver
- The reader should understand why the study was done and its significance in the general field of study
- Make clear what questions are being asked or what hypotheses are being examined



stuarduncan.name

The Introduction – My Way



summerwindproductions.com

First Level:

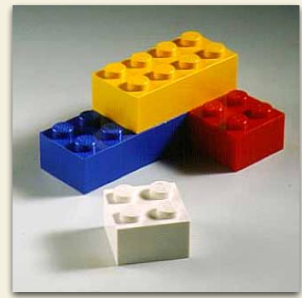
The organism/plant/principle that you are working with in the study.

Flowering dogwood (*Cornus florida*) is a ubiquitous understory tree native to the eastern United States.

Why it is important to the ecology, ornamental industry etc.?



The Introduction – My Way



w3.org

May either amplify something in the first paragraph with additional paragraphs or go to “second level” directly.

Level 2: What is the problem?

Flowering dogwoods have played an important role in the structure and function of Appalachian forests.

In the past three decades, flowering dogwoods have been severely affected by dogwood anthracnose.

The Introduction – My Way

Several more paragraphs describing the disease and mortality of dogwoods.

Level 3: How are we going to assess the problem?

Impact of the disease on the population as measured by genetic variability.

May include methodology here or in next level.



The Introduction – My Way



trainingserver2.net

Level 4: Stating the objectives of the study

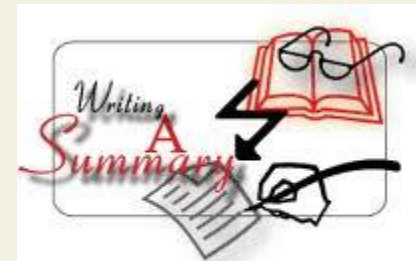
By using 19 highly variable microsatellites of flowering dogwoods, we aimed to address the following issues: 1) genetic variability . . . ; 2) compare diversity in various regions; and 3) describe population structure in the United States.

In this case, Level 4 contains both methods and objectives of the study.

Introduction – Summary

The most simple Introduction has:

- What you are studying (the organism, process, etc.)
- Why you are studying (the problem)
- What are your objectives (the aims)



End Session 4

Four parts of the abstract

Keywords – Needed or not?

Introduction

Materials and Methods – organization of the manuscript

Details, details and more details



wornthrough.com