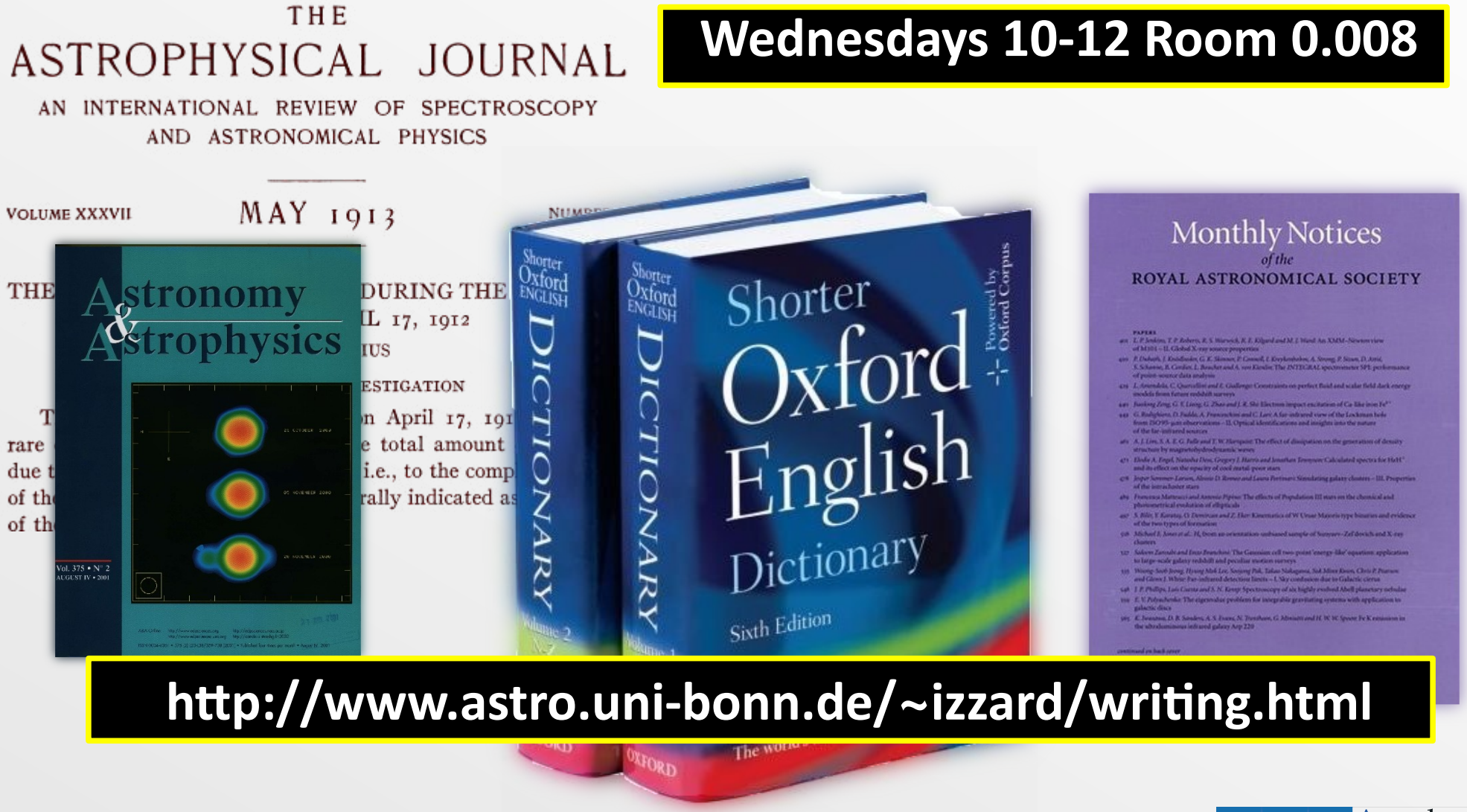
Scientific Writing 6951



Wednesdays 10-12 Room 0.008

http://www.astro.uni-bonn.de/~izzard/writing.html

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Class 2: Reading

- What is an article?
- Standard journal article structure
- Where to find articles
- How articles are presented
- How articles are read
- Titles : what makes an effective title
- Astroph titles exercise

Articles

Article (noun)

- An article is a written work published in a print or electronic medium. It may be for the purpose of propagating the news, research results, academic analysis or debate. *(Wikipedia)*
- A non-fictional piece of writing forming part of a journal, encyclopaedia, or other publication, and treating a specific topic independently and distinctly. *(Oxford English Dictionary)*


Street Light Monitoring - a Practical Solution

Introduction

The System

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Structure of Articles

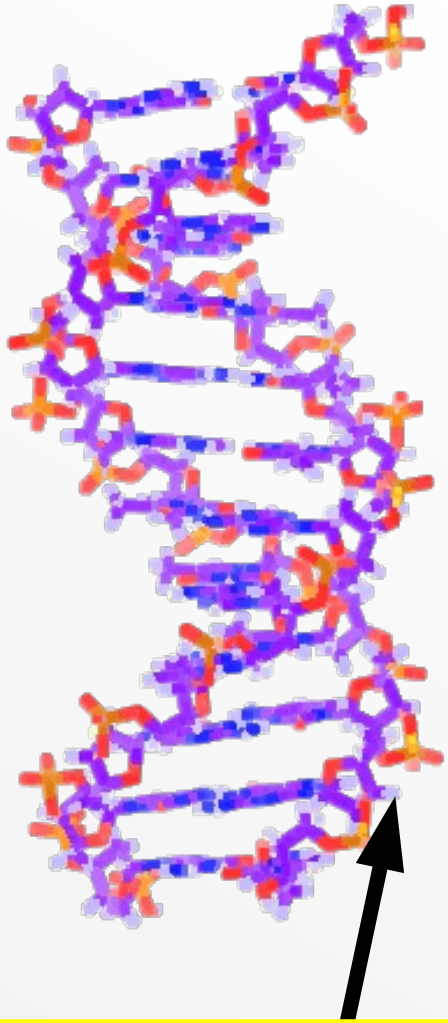
A “standard” structure has evolved for journal articles:

- Abstract
- Introduction
- Method
- Results
- Discussion
- Conclusions

You are *not* required to use this structure,

but **be very careful** if you chose not to!

Why is it this way?



1) It works **well enough**

2) **Other structures** generally **work less well** for most people (again, know your audience)

Paper structure = evolved!

We will discuss what the parts of an article are for in more detail next time...

Where to find articles

In astronomy there are **three main journals:**

- The “UK journal” : Monthly Notices of the RAS
- The “EU journal” : Astronomy and Astrophysics
- The “American journal” : The Astrophysical Journal

Preprints : “astro-ph” on arxiv.org

MNRAS

The “UK journal” : Monthly Notices of the RAS

Since: 1827 Where: London

Language: English Publisher: Wiley

Delayed Open Access (36 months)

£0 per page! (except colour pages)

http://mnras.oxfordjournals.org

Monthly Notices is one of the world's leading primary research journals in astronomy and astrophysics, as well as one of the longest established. It publishes the results of original research in positional and dynamical astronomy, astrophysics, radio astronomy, cosmology, space research and the design of astronomical instruments.

Astronomy and Astrophysics

The “EU journal” : Most EU (not UK), Arg. Braz. Chile

Since: 1969 Where: Paris

Language: English Publisher: EDP/ESO

Access: some open, some paid for

€0 per page (except colour pages)

http://www.aanda.org/

Astronomy & Astrophysics is an international Journal which publishes papers on all aspects of astronomy and astrophysics (theoretical, observational, and instrumental) independently of the techniques used to obtain the results.

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The Astrophysical Journal

The “American journal” : ApJ

Since: 1895 Where: Hamilton, Canada

Language: English Publisher: IOP/AAS

Access: paid for

$40 per 350 words/figure/table! (colour pages $350)

http://iopscience.iop.org/0004-637X

Catchy URL!

The Astrophysical Journal is the foremost research journal in the world devoted to recent developments, discoveries, and theories in astronomy and astrophysics. Many of the classic discoveries of the 20th century have first been reported in the Journal, which has also presented much of the important recent work on quasars, pulsars, neutron stars, black holes, solar and stellar magnetic fields, X-rays, and interstellar matter.

THE ASTROPHYSICAL JOURNAL

Preprints

Before they are published, papers are usually submitted to a *preprint server.*

This is colloquially known as *astro-ph*

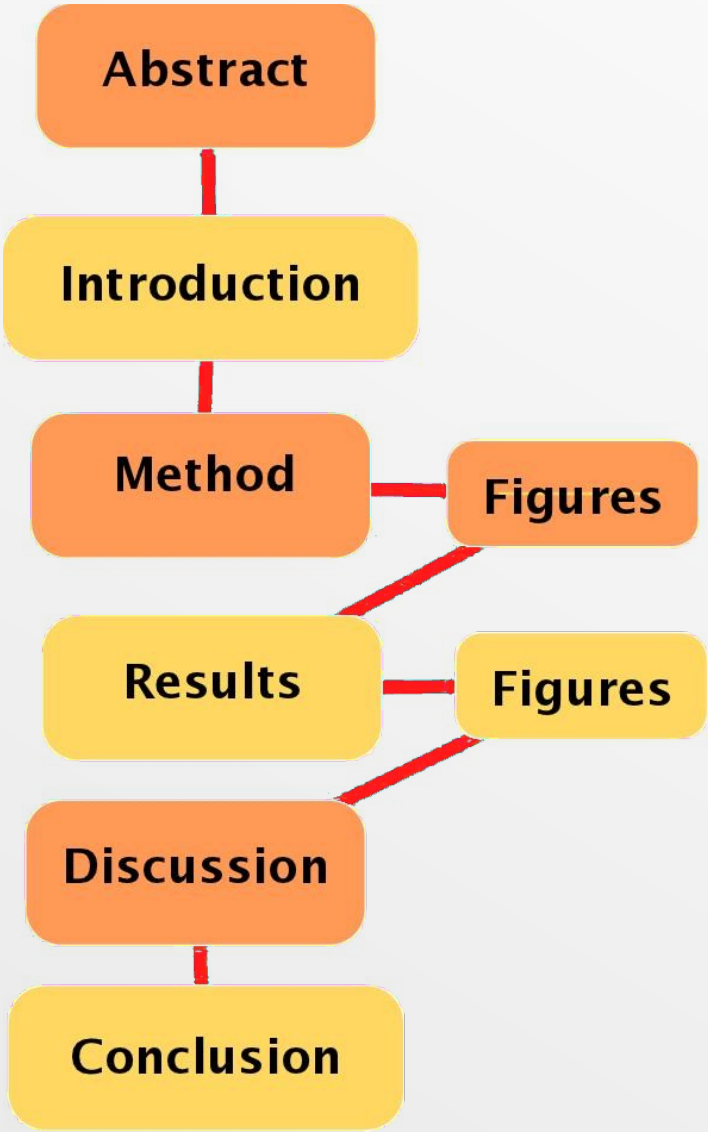
See http://arxiv.org/archive/astro-ph

No page charges, no paper and no quality control!

- Publication of manuscripts in a peer-reviewed journal takes time
- The need to quickly circulate current results within a scientific community led to preprints:

  manuscripts that (often) have yet to undergo peer review.
- Early feedback from peers is helpful in revising and preparing articles for submission.

Articles are linearly presented



Probably also linearly refereed!

Class 1 Homework

Choose an article from journals' latest edition:

About **something that interests you!**

In what order did you read the article?

"Email me the answer over the weekend"

In **English**, the weekend does not include Monday, Tuesday or Wednesday !

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Class 1 Homework

"Email me the answer over the weekend"

Typical responses:

1. Title
2. Abstract
3. Introduction
4. Figures
5. Methods
6. Results
7. Conclusion
8. Discussion

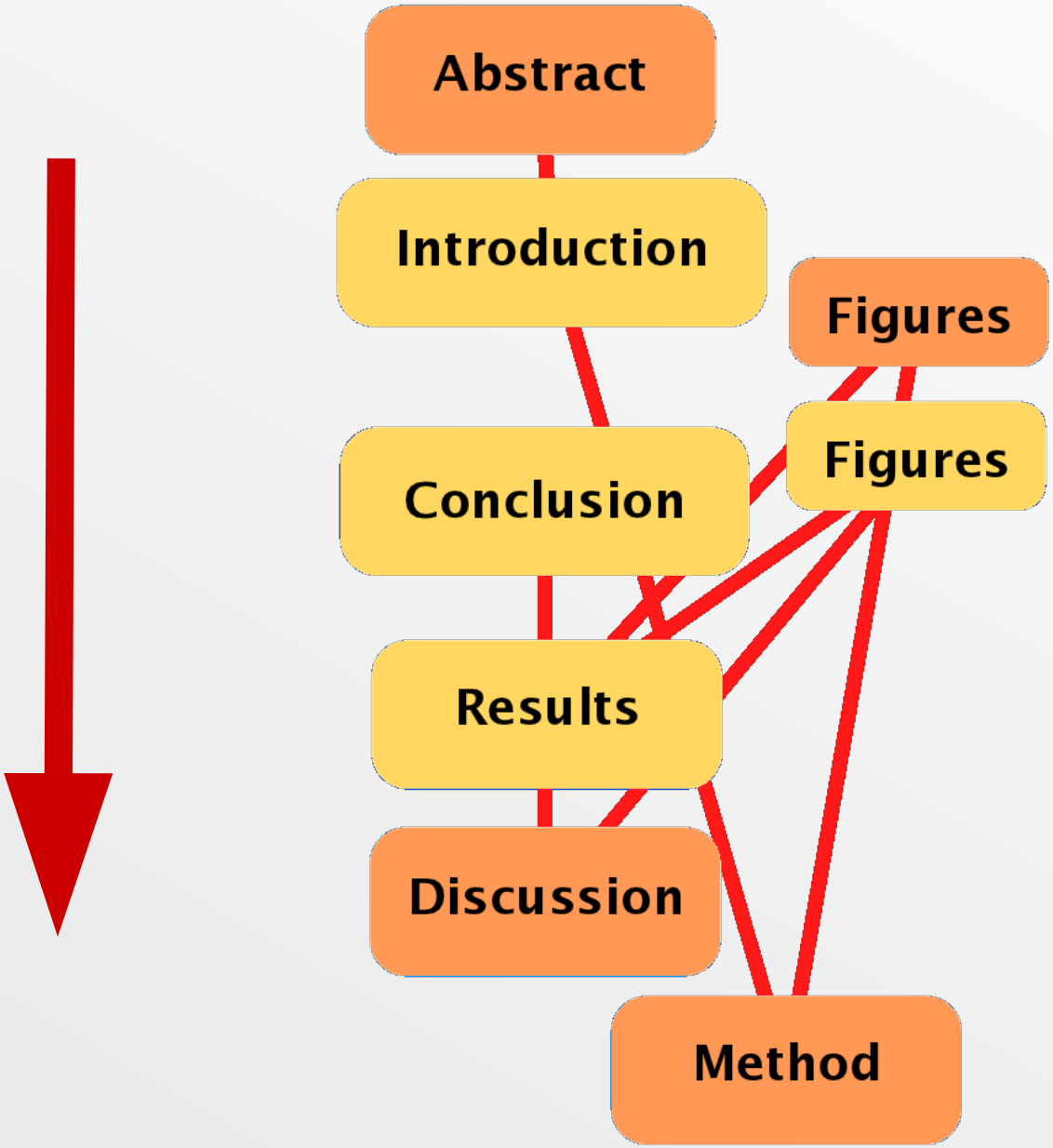
1. Title
2. Abstract
3. Introduction
4. Figures
5. Results
6. Discussion
7. Conclusions
8. Method

Other responses

- Title, Abstract, Intro, Figures, Method, Results, Conclusion
- Title, Abstract, Intro, Figures, Discussion, Conclusion
- Title, Abstract, Intro, Method (inc. Figures), Discussion, Conclusion
- Title, Abstract, Intro, Conclusion/Summary, Discussion
- Title, Abstract, Figures, Conclusions, Discussion
- Title, Abstract, Intro, Figures, Conclusion/Summary, Method

- **Title** and **abstract** first
- **Introduction** *especially if it's not your field...*
- Then **figures**, results/discussion/conclusion
- ***Method*** .. ? very important, but ...

Reading is non-linear



Reading is non-linear

- *Schultz* (of *Eloquent Reading*, page 31)

  quotes a study of managers given a report:

- ***Every*** manager read the abstract
- **60%** read the introduction
- **50%** read the conclusion
- **15%** read the body of the report
- **10%** read the appendix:
- *9 reports were **almost unread** for each thoroughly read report*

Titles

The first thing you will read is

THE TITLE

This is used to initially sell your paper/proposal/dissertation/...

… so it must be good!

Titles

The first thing you will read is

THE TITLE

Motivates further work (feels good!)

Start with a title to focus your thoughts

You can always change it later

(but I find I rarely do)

Good Titles

- Informative
- Accurate
- Clear
- Concise
- **Command attention!**

These may conflict, it is up to *you* to choose!

Based on Lipton, W. J., 1998:

The Science Editor's Soapbox 93:

See Schultz' *Eloquent Writing*

Good Titles

- *Informative: sell the main points of the paper*
- Accurate
- Clear
- Concise
- **Command attention!**

Be as specific as possible without details

Choose words carefully

One or two points *maximum !*

Good Titles

- Informative: sell the main points of the paper
- *Accurate: be truthful!*
- Clear
- Concise
- **Command attention!**

- No exaggerated claims
- Do not lie to make it sound more exciting than it really is!

Good Titles

- Informative: sell the main points of the paper
- Accurate: be truthful, no exaggerated claims!
- *Clear: do not make the reader guess what you mean*
- Concise:
- **Command attention!**

A title may be open to interpretation: do not allow this!

Ask colleagues for their opinion:

What do they think your paper is about?

Good Titles

- Informative: sell the main points of the paper
- Accurate: be truthful, no exaggerated claims!
- Clear: do not make the reader guess what you mean
- *Concise:*
- **Command attention!**

Short titles jump off the page/screen/e-book reader

Every word should be there for a reason

Every word should contribute meaning

Good Titles

- Informative: sell the main points of the paper
- Accurate: be truthful, no exaggerated claims!
- Clear: do not make the reader guess what you mean
- Concise: instant recognition!

Command attention!

If you can meet the four previous criteria

AND make it sound exciting (perhaps provocative)

then do it!

Good Titles

War and Peace

The Hitchhiker's Guide to the Galaxy

The Adventures of Sherlock Holmes

Good Titles

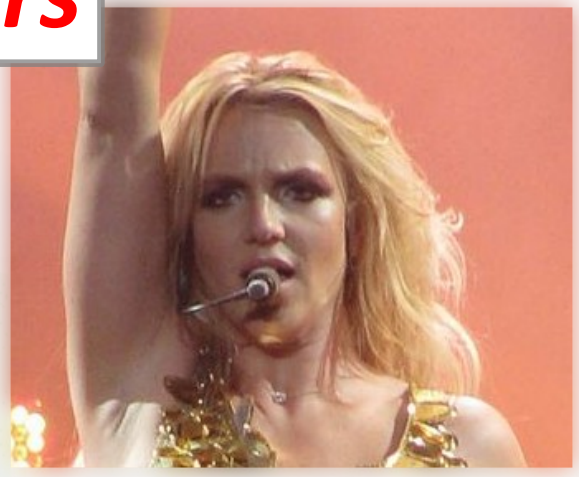
War and Peace

The Hitchhiker's Guide to the Galaxy

The Adventures of Sherlock Holmes

Newspaper headlines are similar, compare the following:

Brit Knee Tears



I'm Only Here For De Beers

Title Structure

- **Keywords**: search engines will use these!
- **Word order**: “Binary star” vs “Star in a binary”
- Avoid **unnecessary** first words:

  “An observational study of...” should be “Observations of” etc.

- Avoid **acronyms**: e.g. BSE

  “Binary Star Evolution” or “Bovine spongiform encephalopathy” or “Breast self-examination” or “Bone surface element” etc.

- Avoid “Using”! “Modelling galaxies using numerical codes”:

  the **galaxies** are using the numerical code? ***Really?!***

Title Structure

- "On ..." sounds **pretentious** and is **imprecise**.

  e.g. "On the evolution of the Sun" (... what about it?)

- **Headline** titles: fine for *Nature* but not for *MNRAS*!
- **Annoying** titles: do not render your work trivial!
- Titles as questions can be **provocative**,

  e.g. "***Will the Sun explode tomorrow?***"

- Colons **:** can be used to move the important word to the front of the title. (These tend to elongate the title)
- **Multipart** papers are dangerous ...

Titles Class Exercise (part 1)

Informative Accurate Clear Concise Attention!

Take today's title list from **astro-ph**

Rate them according to the above criteria:

1. **Excellent**
2. **Adequate**
3. **Poor**

Decide which are the three best and three worst!

Titles Class Exercise (part 2)

Informative Accurate Clear Concise Attention!

Each group should them suggest **new** and **improved** titles for the ***worst*** three! Remember the criteria above!

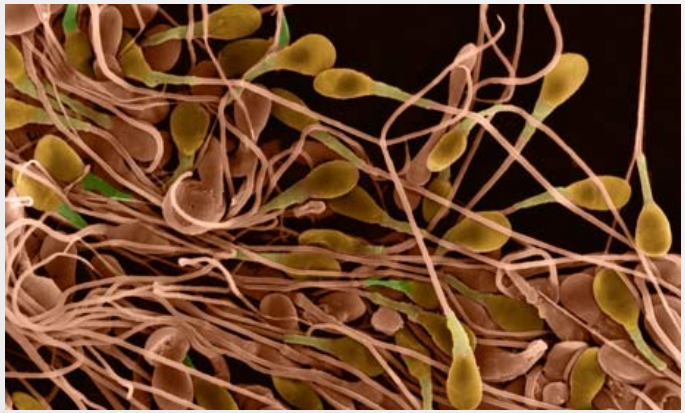
Followed by short presentations giving the best, worst and replacement titles …

Homework

http://www.guardian.co.uk/commentisfree/2011/oct/14/does-a-question-get-science-paper-cited

'How big is a giant sperm?' is a favourite title for interrogative types of papers.

theguardian



Articles with question marks in the titles tended to be downloaded more, but cited less; article titles containing a colon had fewer downloads and fewer citations.