8-2013

Writing for Publication in Biomedical Informatics Journals

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Writing for Publication in Biomedical Informatics

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Wednesday, 21 August, 2013

MEDINFO2013, Copenhagen

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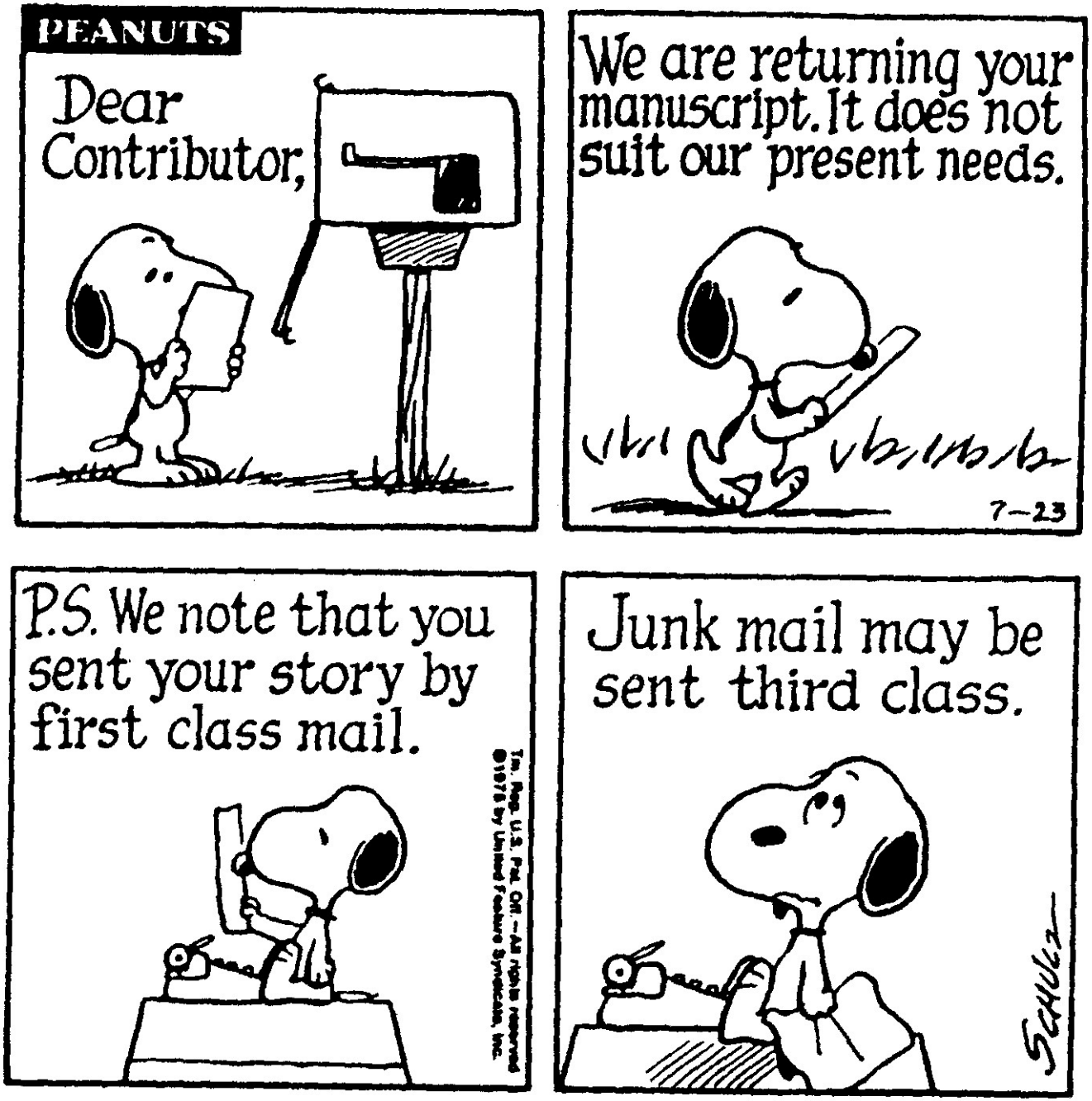

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Learning Objectives

After the workshop, participants will be able to:

- Understand the types and structure of publications (journals, conferences)
- Plan and get started on a scientific manuscript
- Understand how to prepare manuscripts for publication, including tables, graphs, references, etc.
- Realize ethical aspects, such as authorship, duplicate submission, electronic publication
- Understand the submission, review, and editorial decision process
- Know information technology tools that can support the manuscript preparation: mindmapping, bibliographic references, etc.

Outline

I Preparing a manuscript: from idea to submission

II Submitting a manuscript: from submission to final decision

III Receiving a manuscript: The Editor's perspective

IV Ethical aspects

V Helpful hints & errors to avoid

VI Questions & Discussion

Thoughts

- Why do we publish (or need to publish)?

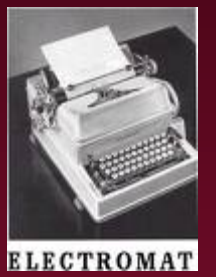
I - Preparing a Manuscript: From Idea to Submission

One size fits all ?















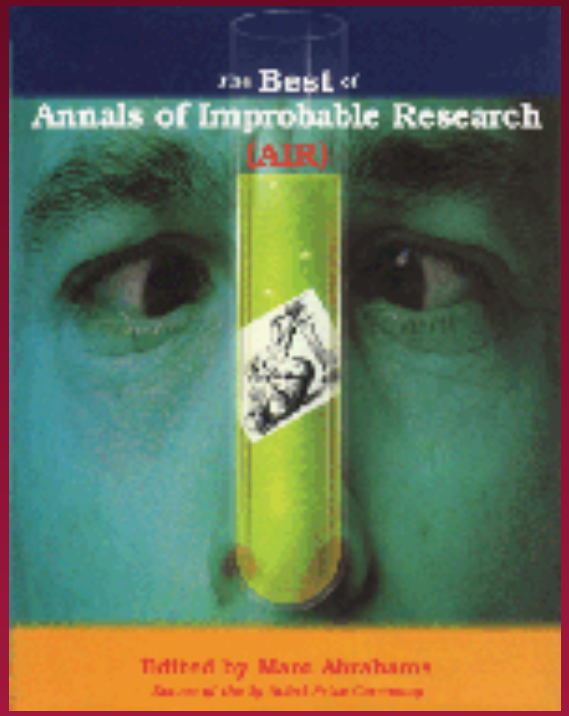






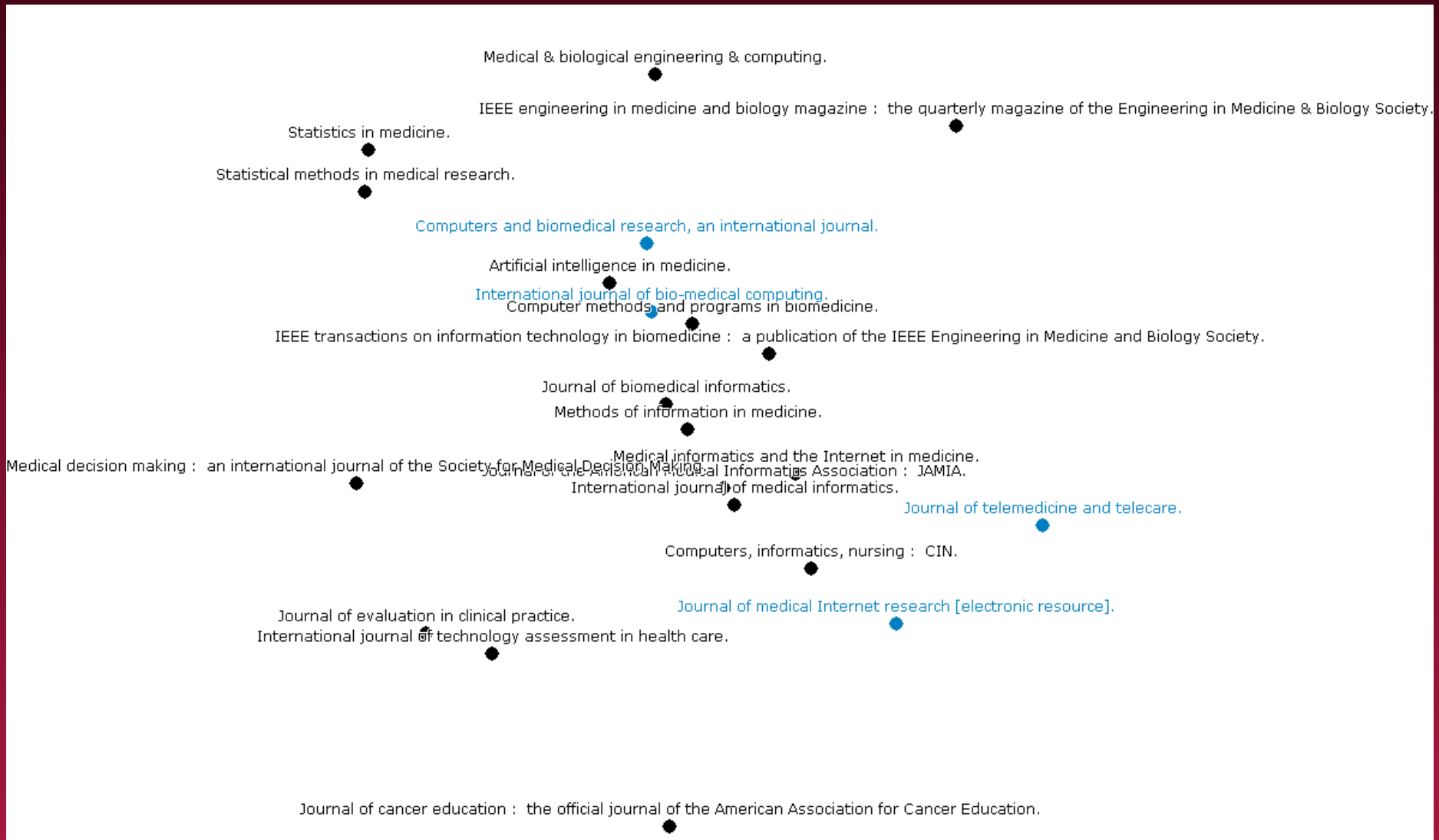
Targeting Your Audience

- Choose an audience, create a list of journals, target a journal



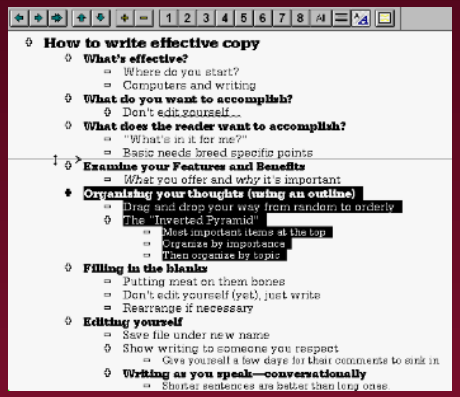
JOURNAL OF NEGATIVE RESULTS IN BIOMEDICINE

“Journal Map”: Navigating the Biomedical Informatics landscape

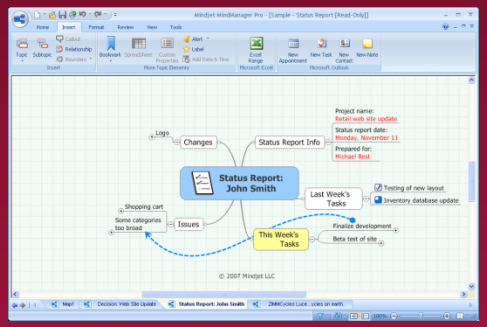


Getting Your Thoughts Together: A First Draft

- Initial outline



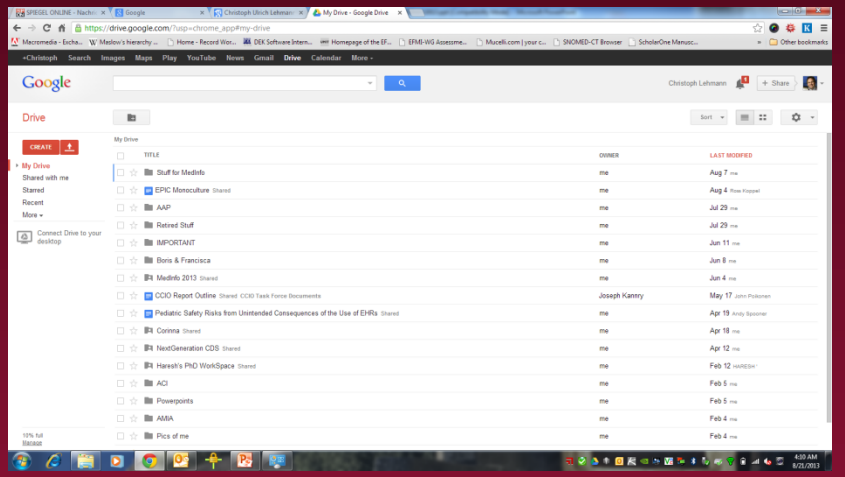
- Mind mapping



- Write, write, write

Shared Workspace

- Collaborative writing efforts
  - Shared environments
    - Wiki
    - Dropbox
    - Google Drive
  - Concurrent work
  - Commenting and highlighting
  - Versioning



Types of Papers

- General:

  original research, reviews, short communication, case reports, editorials, letters to the editor, ...

- Special:

  technical briefs, methodological papers, application of information technology, research letters, …

IMRAD

- Introduction
  - Why this study? What is the research question?
- Methods
  - When, where, and how?
- Results
  - What did the study find? Hypothesis true?
- Discussion
  - Why does it matter? Limitations? How does it fit with previous findings? What should be researched next?

Manuscript Outline / Template

- Title
- Author information
- Acknowledgments
- Word count (observe limits)
- Keywords
- Address of corresponding author
- Abstract
- Text (IMRAD): double-spaced
- References
- Legends
- Tables
- Figures

1-2 pages

1-2 pages

recommendations

recommendations

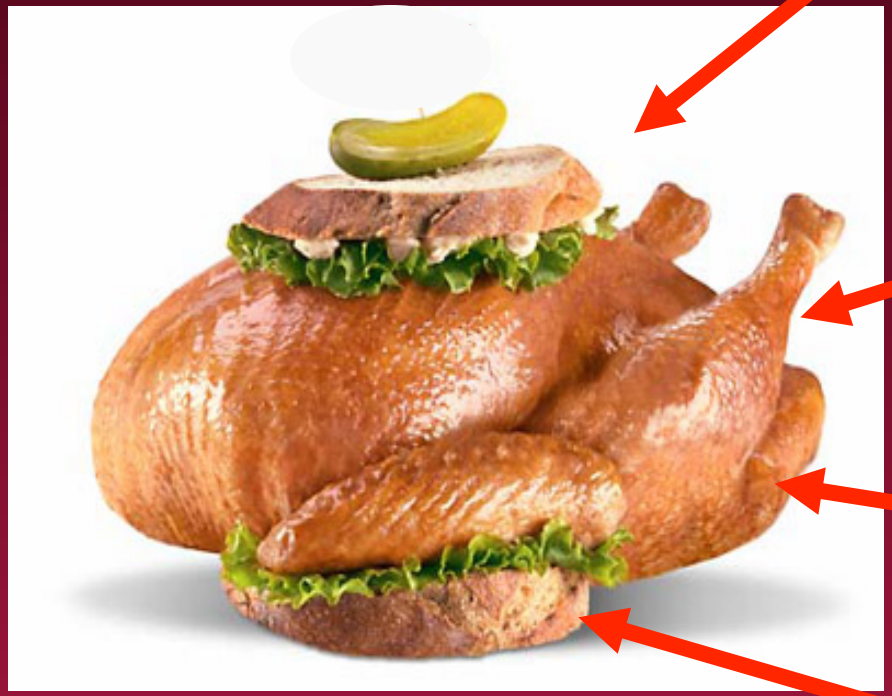
1-3 pages

recommendations

- Author contributions
- Conflict of interest (sponsors, agency information)
- Trials registration, statements such as the CONSORT

Research Paper

"Sandwich technology"



Introduction:
- High level problem statement
- mid-level problem statement
- "research gap"
- goal of this study

Methods:
- setting, population, procedures/ statistical analyses, etc.
- reproducible

Results:
- Data (without interpretation)

Discussion:
- Interpretation of data
- put in context with existing research
- limitations

Revising Your Manuscript

- Revise your manuscript
- Special attention: title, abstract
- Technical writing ⇔ creative writing
- Spelling
- Punctuation

  Let's eat Grandma! ⇔ Let's eat, Grandma!

- Considerations for authors whose primary language may not be English (translation services)

Some Thoughts

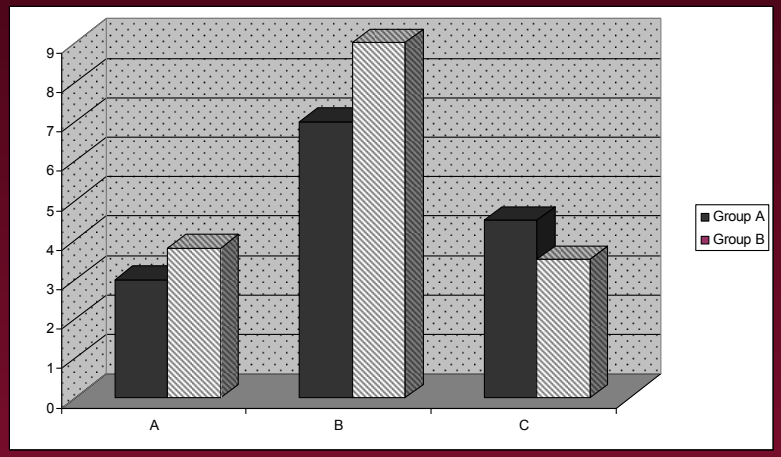
- ...the scientific and medical literature is still abundant with lengthy, unclear prose that is likely to confuse readers...
- ...a reader who cannot extract the significance of a paper from its title is unlikely to read further
- ...there is nothing more disconcerting than trying to assemble a story from a jigsaw puzzle of results
- If the discussion must perform intellectual or literary acrobatics to interpret and convince, the results are obviously not sufficiently convincing on their own

Cited from: *Bredan AS, van Roy F. Writing readable prose: When planning a scientific manuscript, following a few simple rules has a large impact. EMBO reports 7, 9, 846–849 (2006)*

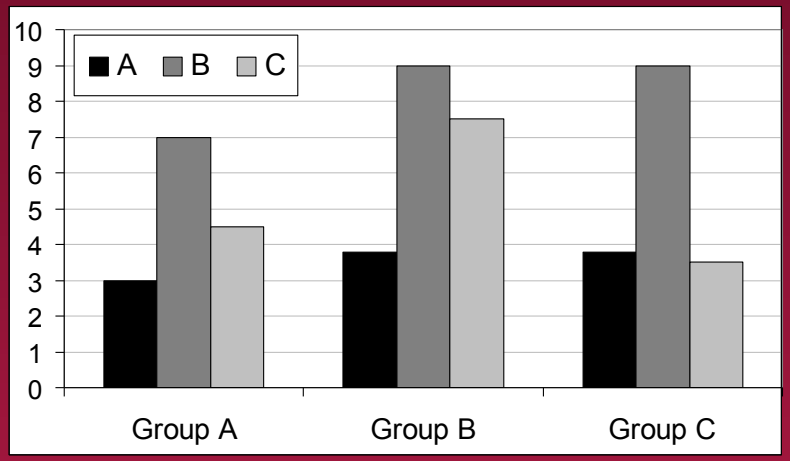
Tables & Figures

- Integral part of a paper
- Tables and figures summarize key messages
- Need to be able to stand alone
- Avoid redundancy of information:
  text ⇔ tables / figures
- Keep information simple
- Keep structure as simple as possible

Tables & Figures

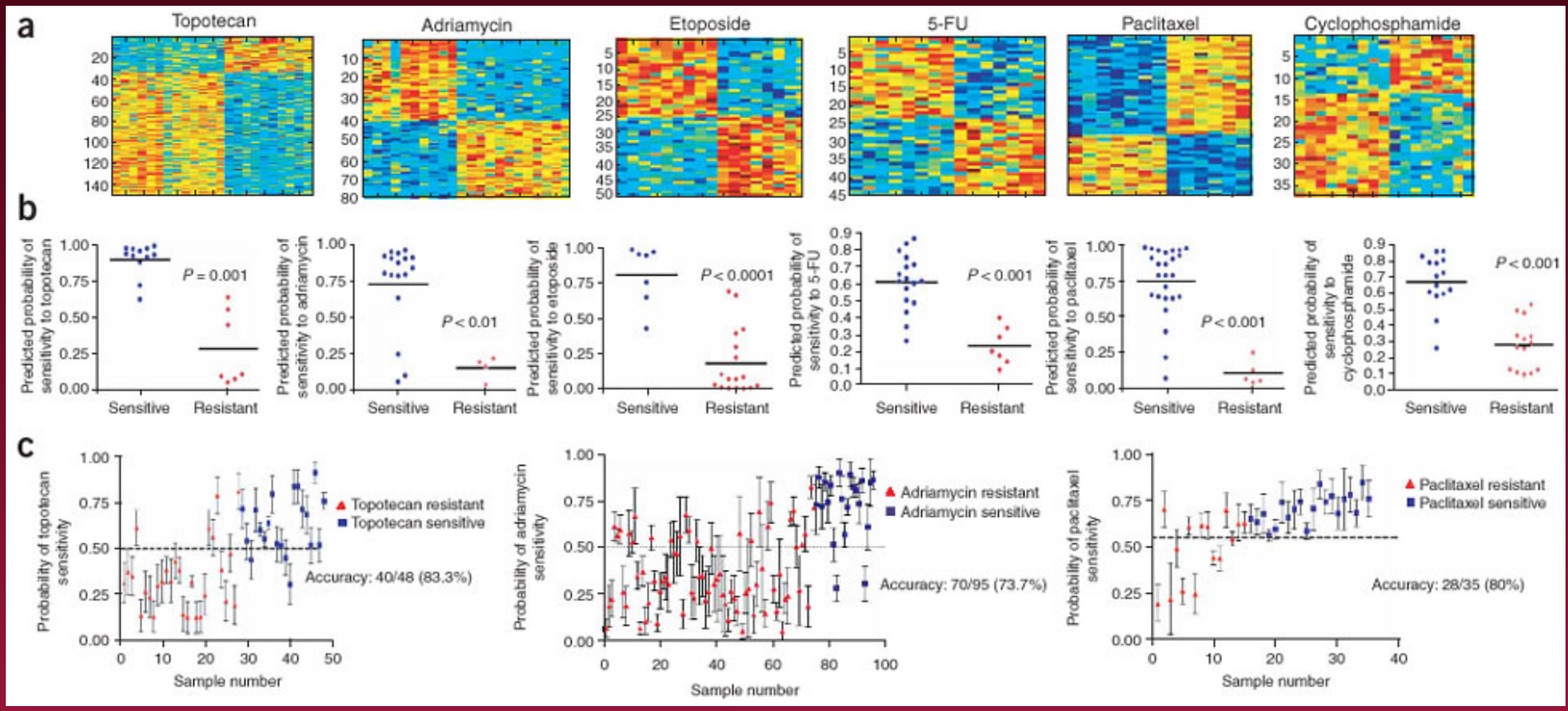


Drug	Group A	Group B	Group C	Group D	Group E
A	3	3.8	3.8	5.5	3.8
B	7	9	9	6.3	9
C	4.5	7.5	3.5	3.5	3.5
D	4.8	6.8	5.2	2.8	4.2
E	2.5	9.3	3.8	7.1	3.5



	Group				
Drug	A	B	C	D	E
A	3	3.8	3.8	5.5	3.8
B	7	9	9	6.3	9
C	4.5	7.5	3.5	3.5	3.5
D	4.8	6.8	5.2	2.8	4.2
E	2.5	9.3	3.8	7.1	3.5

Tables & Figures



Potti et al. Genomic signatures to guide the use of chemotherapeutics *Nature Medicine* - 12, 1294 - 1300 (2006)

Tables & Figures

	US cohort	International Cohort
Patients	2,069	1,048
Mean age	57	64.1
Female	52	51.5
Admission rate	58%	100%
30-day mortality	6.5 % (Confidence Interval = 3.3-5.1)	9% (Confidence Interval = **)

Table 2. Patient demographics.

Tables & Figures

Table 2. Pneumonia Patients: Demographic information

	US cohort (n = 2,069)	International cohort (n = 1,048)
Age, mean, years (stddev)	57.0 (23.8)	64.1 (22.4)
Female, %	52.0	51.5
Hospital Admission rate, %	58%	100%
30-day mortality (95% CI)	6.5 % (5.3-7.1%)	9.0% (8.1-10.1%)

Small Stuff

- data is — data are
- different than — different from
- et al. — et al
- between — among ("between" when you are talking about distinct, individual items even if there are more than two of them)
- which — that (that before restrictive clause – Gems that sparkle)
- it's — its
- Avoid "very" and certainly "very unique"
- Do not split infinitives:: *"**to boldly go** where no man has gone before"*
  … one suspects that they wanted to slightly conceal the fact …
  … one suspects that they wanted to conceal the fact slightly…
- He, she or s/he?
- Verb "use"
- Modifiers: adjective / adverbs
- Avoid parentheses
- Avoid using: "in order to:
  In order to improve your writing → to improve your writing

→ Tell a story with actions as verbs and characters as subjects → active voice

Small Stuff

Abbreviations:

introduction of abbreviations text, abstract, frequency, common/uncommon (CPR), in tables & figures, trademarks ™, registered ®

Numbers:

write out if smaller than 10; >40,000 or 41,395; avoid starting a sentence with a number: “40 out of 230 cases” but “Forty out of 230 cases…”

Artificial precision:

79 of 98 (80.6122%) patients → artificial precision

~, about, approximately, millions of millions; “significant”

Redundant modifiers:

- During that period of time, the membrane area became pink in color and shiny in appearance. → During that period, the membrane became pink and shiny.
- Serious crisis; large in size

Simplification of phrases:

The educational process and public recreational activities are the responsibility of the county government.
→ The county is responsible for education and public recreation.

References

- Elements of a standard reference:
  - authors
  - title
  - journal
  - year
  - volume
  - page number
- What to reference; how many; self-citation; in-press/in-print/ forthcoming; abstracts; theses; personal communications, URLs
- Use a reference management system, e.g., EndNote®, ReferenceManager®
- URL references: http://www.nlm.nih.gov/bsd/uniform_requirements.html

Accuracy of References

Five biomedical informatics journals were compared with MEDLINE® for journal, authors, title, year, volume, and page number accuracy.

Among 656 eligible references 34.3% included at least one error.

One or more errors were found in the bibliography of 84% of the articles:
- author (39.0%)
- journal (31.2%)
- title (17.7%)
- page (7.4%)
- year (3.5%)
- volume (1.3%)

Authors are responsible for the accuracy of references.

Get started !!

- Getting started is the worst part of a writer's work
- A job worth doing isn't necessarily a job worth doing well
- Journals & editors & readers want to read your contribution
- Involve your peers for initial feedback
- 20% is writing and 80% is re-writing; it is an evolutionary process

II - Submitting a Manuscript: From Submission to Final Decision

Submitting Your Paper

- Instructions for authors
  - Formatting
  - Readability
- Cover letter
  - Content and declaration
- Optional suggested reviewers
  - How to suggest reviewers

Manuscript Management System

- Some journals use manuscript management system (MMS) to track the whole process of:
  - Submission
  - Revision
  - Decision
- Information available includes number of manuscripts, manuscript status, review and decision status, etc.
- MMS serves as communication center with the Editorial Office

Communicating with Editorial Office

- Whom to address
- Types of correspondences
  - Enquiries
  - Withdrawals
  - Corrections
  - Appeals

Revising Your Manuscript

- If major or minor revisions are indicated, manuscript should be revised according to the reviewers' comments and suggestions

- All revisions should be completed within a reasonable time-frame, some journals would specify such a time-frame

Replying to Reviewers' Comments

- Prepare a comprehensive letter to submit together with revised manuscript
- All major comments/suggestions should be addressed for each reviewer
- Highlight amendments and additions
  - Provide two versions of manuscript with and without track changes (but remove format changes)
- It's OK to discuss disagreements and justifications

Replying to Reviewers' Comments

Example:

Reviewer #3

Comment #1: …

…..

Comment #5: "The discussion section mentions …. Can you clarify what you mean by 'xxxxx'?"

Reply: We provided additional details about "xxx" that explain and characterize better how …..

Previous: "Similar flags exist for various conditions such as patients who represent a ….. "

Revised (page 13, 1st paragraph): "Similar flags ….."

Final Decision to Publication

- Once a final decision is made, authors will be asked to prepare final draft, usually with separate files for diagrams and figures
- Copy editing services are sometimes provided
- Authors need to go through galley proofs
- Article may first be available electronically, with a digital object identifier (DOI) that can be used to locate the paper, before putting in print.

Why manuscripts are rejected

- Poor experimental design and/or inadequate investigation
- Failure to conform to the targeted journal
- Poor English grammar, style and syntax
- Insufficient problem statement
- Methods not described in detail
- Overinterpretation of results
- Inappropriate/incomplete statistics
- Unsatisfactory/confusing presentation of data
- Conclusions not supported by data
- Incomplete/inaccurate/outdated review of literature
- Comments of reviewers insufficiently addressed

(San Francisco Edit newsletter, May 2008, www.sfedit.net)

III - Receiving a Manuscript: The Editor's Perspective

The Editor's Perspective

- Handling submitted manuscripts
  - First decision: in/out of scope
  - Does it meet the journal's requirements
- Peer review
  - Most journals have external review: a pool of potential reviewers that may be asked to review your manuscript
  - Some systems allow for a classification of your manuscript that can be mapped against the classifications of the reviewers
    - Be specific, use more than one classification term (Clinical information system as sole classification is not very helpful)

The Editor's Perspective

- Peer review process
  - Service to the community (reviewers do not get paid)
  - In principle constructive as to increase the quality of research and of the publications of that research
- Editorial decisions
  - Based on the reviewers recommendations
    - Conflicting recommendations
  - Editorial review
- Communicating with authors

IV - Ethical Aspects

Authorship

- Substantive intellectual contributions
  - conception and design, or
  - acquisition of data, or
  - analysis and interpretation of data
- Drafting or revising critically the manuscript
- Final approval of the published manuscript

➢ All three conditions must be met!

- www.icmje.org

Authorship

- Acquisition of funding, collection of data, general supervision of a research group **alone** does not qualify for authorship
- All listed authors should qualify for authorship, all that qualify for authorship should be listed

Authorship

- Some journals require a description of the contributions of each author to the manuscript.
- Some journals require that one or more authors act as "guarantors"; they take responsibility for the integrity of the study as a whole.

Acknowledgement

- All contributors, not qualifying as authors should be acknowledged.
  - Technical help, general support, writing assistance.
- Also financial support should be mentioned in the acknowledgment – also for writing assistance
- Ask for written permission to have someone acknowledged.

Conflicts of Interest

- This is about potential conflict of interest.
- About potential biases
  - Financial and personal relationships of authors
  - (Conditions of) financial support
    - Agreements on use of data, on analysis of data, on writing of the manuscript
- The non existence of conflicts of interest should be reported as well.

Copyright

- Relevant when making several publications based on the same material.
- Authors often have to transfer the copyright to a publisher.
- Be sure not to copy material of others (and yourself) without proper attribution and without receiving permission
  - Figures in publications, but also usage of a publication in a thesis

Plagiarism

- Publishing work of others under your own name is not allowed. This holds for full texts, but also when it is an idea that has been taken from someone else.
- Remember that this also holds for web-pages.
- The guidelines of the Committee on Publication Ethics suggest to consider informing the superior of the author or the person responsible for research governance.

Duplicate Publication

- To get the scientific record straight duplicate publication should be avoided.
- For additional information on how unethical publication behavior is dealt with see the website of the Committee on Publication Ethics
  - www.publicationethics.org.uk

Some Miscellaneous Issues

- Duplicate submission
- Serial unaltered submissions (journal hopping)
- Serial minimally altered publications (first proceedings then in peer reviewed journal)
- Self-plagiarism
  - See for details: On Exemplary Scientific Conduct Regarding Submission of Manuscripts to Biomedical Informatics Journals
    - Methods Inf Med 2006; 45: 1– 3

V – Reference material

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http://www.ruf.rice.edu/~bioslabs/tools/report/reportform.html

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http://www.cs.auc.dk/~luca/PDK/pdk.html

http://mobility.lse.ac.uk/download/Sorensen2005b.pdf

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