

# BMI Journal Club Template

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(based on Russ Altman presentation guide)

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# Source and acknowledgements

- ▶ Much of the text of this talk is from Russ Altman's journal club/research talk template, a PowerPoint presentation with both advice and an example of a journal club presentation intertwined.
- ▶ To simplify things, I've extracted the general advice, reformatted it, and added some of my own comments.
- ▶ Although the original talk discussed both journal club and research talks, I'm focusing here on journal club.

http:

[//bmi.stanford.edu/biomedical-informatics-students/forms.html](http://bmi.stanford.edu/biomedical-informatics-students/forms.html)

# How to pick a paper for journal club

The paper should:

- ▶ interest you
- ▶ interest your colleagues
- ▶ *not* be a draft, in publication, or just published yesterday
- ▶ have been cited “a bunch” (check Google Scholar)
- ▶ report a new or improved informatics *method*, or be a novel application of an existing method
- ▶ not be too long
- ▶ not be too “domain heavy” because your audience may not be nearly as interested in this as you are
- ▶ be approved by me

Then ...

- ▶ Plan your 30 minutes: roughly 20-25 minutes of talk with slides, and 5+ minutes of questions and discussion.
- ▶ Make appointment with me several days before your talk to practice it.

# Research Paradigm (The Big Picture)

This is a cycle:

- ▶ An important biomedical problem leads to development of . . .
- ▶ a new informatics method that is . . .
- ▶ evaluated by showing:
  - ▶ a solution to biomedical problem that is . . .
  - ▶ an improvement on existing methods (eg, faster, more accurate), and then. . .
- ▶ showing the generality of the method by applying it to a new problem.
- ▶ *repeat*

# The journal club presentation has three parts

1. Background information and context
2. Their aims, methods, results, and conclusions
3. Your assessment and conclusions

Note that in parts 1-2 you adopt the authors' perspective. You present your own views in part 3. Don't mix part 3 with part 2.

# Outline

1. Why this paper?
2. General description of medical/biological problem
3. Informatics issues that come up in solving this problem
4. Additional medical/biological/informatics background
5. Aims of paper
6. Methods employed
7. Results
8. Comparison/evaluation of methods
9. Conclusions (of author)
10. Assessment of paper: informatics
11. Assessment of paper: biomedicine
12. Concerns
13. Summary/Conclusions (by you)

## Part 1: Why this paper?

- ▶ Why is this a good paper to read for journal club?
- ▶ How/why did you pick it?



## Part 1: Describe the biomedical problem

- ▶ What is the application area of biology or medicine in which this work is presented?
- ▶ Discuss the biological or medical problem that drove the researchers to recognize potential for informatics innovation?
- ▶ What is the significance of this biomedical problem?

## Part 1: What informatics issues come up in solving these problems?

- ▶ What is the general informatics problem being solved?
- ▶ Review what others have done to solve it. This may require some background reading.
- ▶ Why did the authors decide to write this paper on this topic now?

## Part 1: Additional biomedical and informatics background

- ▶ Review what the audience needs to know to understand the key contributions of the paper.
- ▶ In particular, don't assume they know all the biomedical jargon, or the content of key databases.

## Part 2: Aims of the paper

- ▶ List the specific aims of the paper.
- ▶ Typically, there are three or fewer.

## Part 2: Methods employed

- ▶ Describe the method in sufficient technical detail so that the audience can discuss and evaluate it.
- ▶ This is your central message, so will involve several slides. It may be helpful to start with an overall “flow” slide that shows how data move through the various modules.
- ▶ Avoid slides filled with equations unless critical to the discussion.

## Part 2: Results

- ▶ Show their main results slide(s).
- ▶ You may want to extract part of a complex figure, especially if the text or figure labels are in a small font.

## Part 2: Comparison/Evaluation of Methods

- ▶ How did *they* evaluate their method?
- ▶ What reference standards did they use?

## Part 2: What did the authors conclude?

- ▶ How did they summarize their work?
- ▶ This is typically 1-3 bullet points.



## Part 3: Your assessment of the paper – informatics contributions

- ▶ *Note that until this point in the talk, you have withheld your own comments and criticisms. Now you can shift to discussing:*
- ▶ What are the major methodological (informatics, engineering) innovations in the paper?
- ▶ Are the methods described in sufficient detail?
- ▶ Could you figure out how to implement it from what they wrote?
- ▶ Did they evaluate the method appropriately?
- ▶ How general are the methods?
- ▶ Can they be used to solve other problems?

## Part 3: Your assessment of the paper – significance for biomedicine

- ▶ Does their method actually solve at least part of the biomedical problem?
- ▶ Has the paper helped make a new contribution of biomedical knowledge?
- ▶ What is the significance of this solution to the biomedical domain?
- ▶ Was this paper published in the right journal to find the audience who should care the most about it?

## Part 3: Problems/concerns

- ▶ What do you like about the method, implementation, and evaluation, especially with reference to the technical informatics content?
- ▶ What don't you like?
- ▶ Did the authors make unrealistic simplifying assumptions?
- ▶ What might come next?

## Part 3: Summary

- ▶ Do you accept all of the authors' conclusions?
- ▶ Which ones do you accept?

# References and recommended reading

- ▶ List citations for this paper and related background reading, especially if they could help another BMI student studying for quals.

# Acknowledgements

- ▶ Thank those who assisted in choosing, evaluating and presenting.

## Your contact info

- ▶ Name@email.domain

## Some general advice

- ▶ Imagine your typical audience member, and address the talk to them.
- ▶ Look for on-line reviews of the paper (e.g., Faculty of 1000).
- ▶ Before: check out pubmedcommons:  
<http://www.ncbi.nlm.nih.gov/pubmedcommons/>
- ▶ After: upload comments to pubmedcommons. Contact Rob Tibshirani if problems.
- ▶ Look at papers that cited this paper; see what they did with the results.
- ▶ Put your critiques in your assessment section, not when you first present the method.
- ▶ Consider contacting the paper's authors to clarify issues. Authors are usually flattered that someone bothered to read their paper. Also, this is an important networking skill.



## How to attend journal club

- ▶ Actively read the paper with all of the above issues in mind. Don't just move your eyes over the article text.
- ▶ Plan to make one comment or ask one question (even if you don't get a chance to do so).
- ▶ Consider taking notes on the presentation and organizing them later. Some very smart people just taught you something.

## Intellectual property (for research talks)

- ▶ Well in advance of the talk, check with your research advisor about maturity of your work and whether it is appropriate to get feedback at this time.
- ▶ Note that titles/abstracts will be announced on a *public* calendar.
- ▶ If appropriate, you can show a slide at the beginning saying: “This is work in progress, no photos of slides, and please do not disclose outside of this room.”

# Video taping

- ▶ To include our distance education students, we are now taping the journal club and research-in-progress talks.
- ▶ These videos are for the distance ed students only.
- ▶ The videos are kept only for short time to allow review; they are not permanently archived.

## Contact Info

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