

Communicating Science:

How to get your results published

RNA 2009 Workshop
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How to write an outstanding paper:

Do outstanding science

- ◆ Ask an important question
- ◆ Work with smart people
- ◆ In a productive environment

Integrate writing with research

- ◆ Take a clear and logical approach
- ◆ Turn results into figures

Why Publish:

Make a scientific contribution

- ◆ If a tree falls in the forest.....

Writing promotes outstanding research

- ◆ Imposes purpose, logic on experimental design
- ◆ Highlights gaps in experimental data
- ◆ Motivates complete, accurate record-keeping

Why Publish Now:

Significant scientific advance

Solid story

- ◆ Reproducible
- ◆ Consistent
- ◆ Complete

Where to Publish:

Significance – major or incremental

Your Audience - specific or general

- ◆ Editorial Guidelines
- ◆ Instructions to Authors

Cost

- ◆ \$
- ◆ Time
- ◆ Hassle

Anatomy of a Research Article:

- ◆ Title
- ◆ Abstract/Summary
- ◆ Introduction
- ◆ Materials & Methods/Experimental Procedures
- ◆ Results
- ◆ Discussion

Title:

- ◆ State the main point
- ◆ Avoid acronyms, jargon, chains of nouns
- ◆ Make it intelligible to a general reader

Abstract/Summary:

- ◆ Specific, concise summary of the paper
Objective, Methods, Results, Conclusion
- ◆ Stands alone
- ◆ Intelligible to a general reader
Avoid acronyms, jargon

Introduction:

- ◆ Purpose of the study
- ◆ Relationship to earlier work in the field
- ◆ Concise summary
 - Approach
 - Results
 - Conclusions

Experimental procedures:

- ◆ Materials

 - Biological, chemical, equipment

- ◆ Methods

 - Describe new methods in sufficient detail to allow repetition

 - Provide references for established methods

- ◆ Data analysis methods

 - Calculations

 - Experimental uncertainty

Results:

- ◆ Organization

 - Chronological or logical

- ◆ The Data

 - Figures, tables

 - clean, simple, self-explanatory

- ◆ Text

 - Direct, concise, unambiguous

 - Minimize interpretation

 - Avoid repeating data in figures or tables

Discussion:

- ◆ Interpret the results
 - Models, principles, implications, applications
- ◆ Describe relationships to previous work
- ◆ State conclusions
 - Summarize supporting data
 - Minimize repetition of Results
- ◆ Explain the significance
 - How did this study advance the field?

How to write:

- ◆ Integrate writing with research
- ◆ Proceed from the inside out
 - ◆ Figures and Tables, as you work
 - ◆ Methods
 - ◆ Results
 - ◆ Discussion/Conclusion
 - ◆ Introduction
 - ◆ Abstract/Title

Scientific writing:

- ◆ Tell a good story
 - Complete but concise
 - Direct, precise, consistent
- ◆ Optimize figures
 - Simple, clean, self-explanatory
- ◆ Use appropriate statistics
 - Mean, standard deviation, range
- ◆ Significant figures
 - Number of digits that reflects precision

The Submission:

- ◆ Cover letter
 - List authors
 - Summarize (pitch) the content
 - Suggest potential referees, exclusions
- ◆ Instructions to Authors
 - Verify text and figure file formats
 - Complete-keywords, abbreviations
 - Assemble forms-copyright, reprints
- ◆ Database submissions, for future release (Genbank, PDB, etc.)

After submission:

- ◆ Expect acknowledgment of receipt
- ◆ Editor - Should manuscript be reviewed
 - Consistent with Editorial Guidelines
 - Potentially acceptable
- ◆ Manuscript sent to 2 reviewers
 - Editorial Board and/or expert referees
 - ~several days to weeks (unless referees differ)

The Decision Letter:

- ◆ Accept (<5%)
- ◆ Accept after minor revisions
Revisions of text and/or figures
Little, if any, new data needed
- ◆ Reconsider after major revisions
Usually requires new data
- ◆ Decline (>50%)
“Serious flaws”
“Not sufficiently significant”

Responding to Critiques:

- ◆ Stay positive and constructive
- ◆ Revise the manuscript
 - Fix the “problems”
 - Clarify any misunderstandings
- ◆ Consider another journal
 - Fundamental disagreement with reviews
 - More appropriate audience

The Resubmission:

- ◆ Cover letter

 - Stay civil

 - Point by point response to reviewers' concerns

 - Explain each revision

 - Explain any decisions to leave as is

- ◆ Annotate revision to show changes

“Accepted for Publication!”

- ◆ Send files to publisher
 - Format files per Instructions to Authors
- ◆ Correct page proofs
 - Fix errors only, no major revisions
 - Quick turnaround
- ◆ “In press”