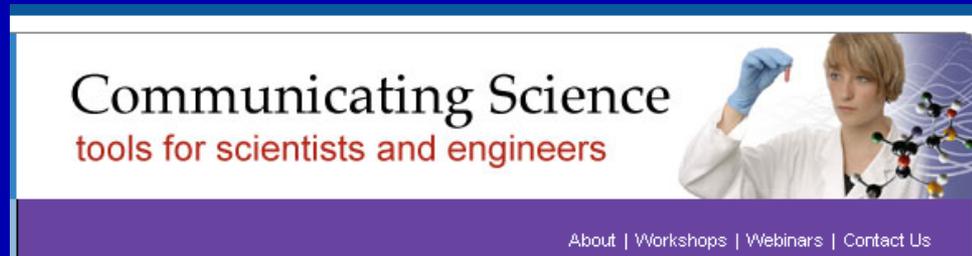


Communications from the view at *Science*



Pamela J. Hines, Ph.D.
SCIENCE, AAAS
Washington DC

AAAS website: <http://communicating-science.aaas.org/>



[Upcoming Workshops:](#)

March 22, 2010 - Austin, TX

April 29, 2010 - Boulder, CO

In response to this need in science communications, the [AAAS Center for Public Engagement with Science and Technology](#) has partnered with the National Science Foundation to provide resources for scientists and engineers, both

Develop a 15-30 second soundbite that addresses "how this will affect me".

Have two brief supporting points.

Be prepared for difficult questions.



SubCompact writing: Titles, Teasers, Abstracts, and Summaries

- **ABSTRACTS** capture the essence of the paper's new contribution:
 - BACKGROUND for general reader, then specific to your study.
 - RESULTS, and OBJECTIVES/METHODS
 - CONCLUSIONS.
 - LENGTH limits is 125 words.
- **TEASERS** entice the busy reader to look more closely:
 - Should capture the interest
 - Need not include technical details
- **TITLES**
 - Informative, not mysterious
 - Capture the essential importance
 - Clever is ok, obfuscation is not
- **SUMMARIES** such as Editors' Choice
 - Convey the essence of technical conclusions using non-technical language.
 - What is the context?
 - What is the problem?
 - How does this approach try to answer the problem?
 - What was learned?
 - What future directions does that suggest?



Mid-sized writing: Press releases & Letters

- Press releases

- Communicate to newsreporters, who get much more of their science from press releases than from scientists
- Capture the interest of non-specialists
- The best press releases
 - have a clear message expressed early
 - connect to the audience's region or area of interest
 - avoid decorative asides
 - avoid excessively technical language
 - Stretch the audience a little but not too much
 - focus on the big picture
 - make the research tangible: analogies, metaphors and the art of storytelling



- Letters to the Editor

- Use lively, accessible language and avoid jargon
- Structure the letter logically:
 - State your purpose clearly. Are you disagreeing with an interpretation, adding a point that was omitted, synthesizing several related points, providing a list of steps or suggestions?
 - Provide examples/explanation/suggestions, relating each to the main point.
 - Conclude with big picture/implications/next steps.
- The best letters
 - are written for a wide audience
 - discuss points of broad interest
 - present a new idea, perspective, or interpretation (without requiring new data)
 - use responsible referencing (not cherry picking to support an opinion)

The Luxury essay: plentitude without fluff

- Carefully crafted writing
 - Compels by excellence of thought
 - Compels by excellence of language
 - Need not be long
 - Shines with quality



How to define quality?



Science looks for

- Outliers
- Closers
- Leaders

Common reasons for acceptance

- Important question
- Interesting or unexpected answer
- Great science!

What makes a paper suitable for Science?



- Features of papers that might be similar to other papers in Science
 - Importance
 - Impact
 - Clarity
 - Quality of the research
- Optimal use of Science formats
 - Quality of the presentation
 - Manuscript length
 - Informative supplemental material

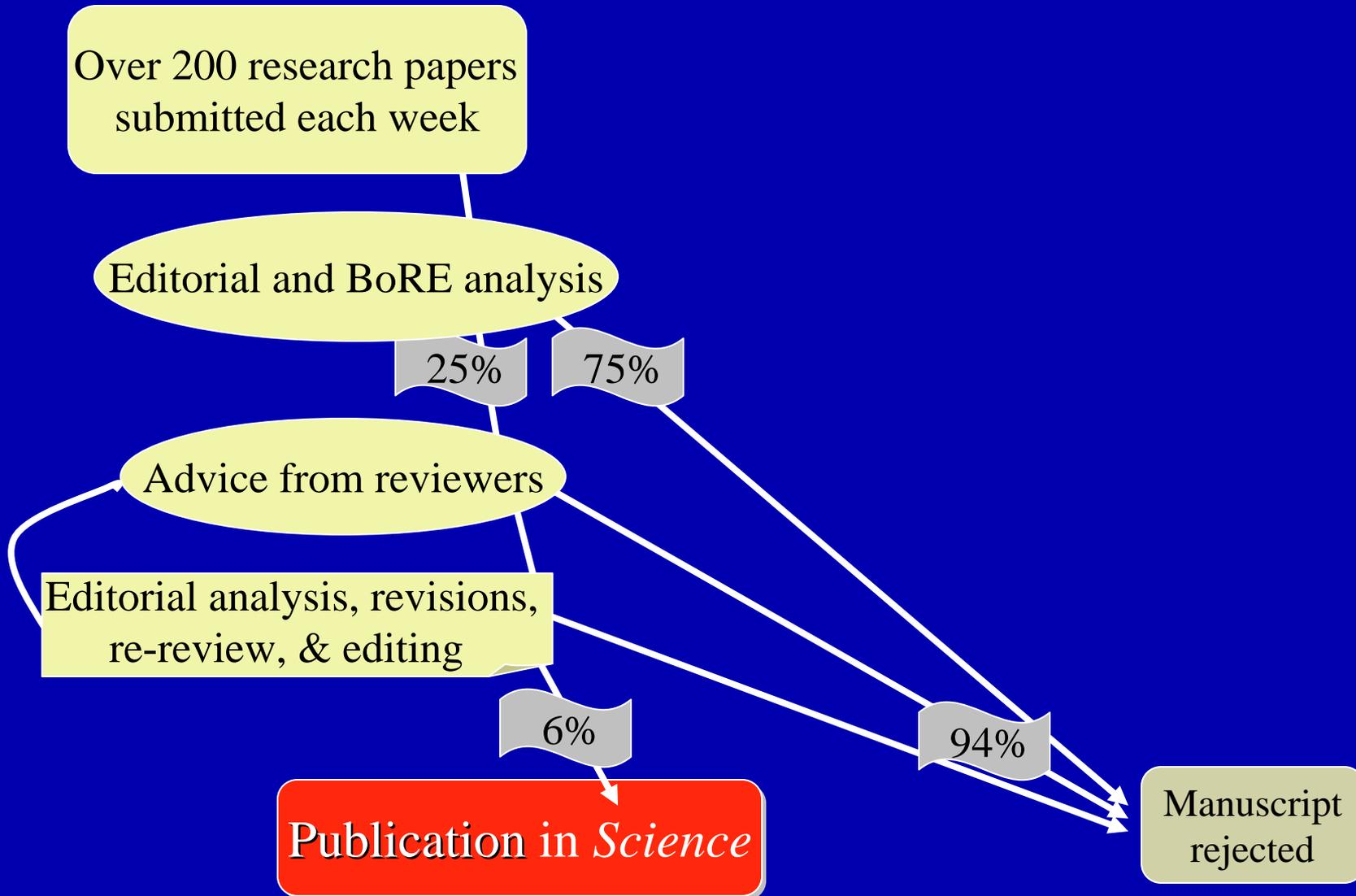
- Features of papers that might be different from other papers in Science
 - Topic
 - Technology
 - Methods
 - Research subject
 - Domain
 - Authors
 - Locations
 - Country
 - Research sites

Common reasons for manuscript rejection



- Topic is not of broad interest
- Result is too small of an advance
- Conclusions are not convincing
- Interpretations are poorly supported
- Insufficient mechanistic insight
- Insufficient evidence of relevance
- Permutations of a known phenomenon

What happens to your manuscript at Science?



WHY is it worth the effort?



The visibility is great:

- Science is in over 1400 libraries and universities around the world
- Site licenses make the journal broadly available online
- Over a hundred thousand individuals have personal subscriptions, usually share their copy

Total readership, print plus on-line,

~1 million people every week

- Original research is freely available with registration 1 year after publication
- Authors can link to the final version from their website for free access

Think like reviewers and editors:

- The importance

If the interpretation is correct, would this paper be interesting enough?

- The data

- Robust data?
- Appropriate controls?
- Original approach?

- The presentation

- Well written text?
- Well organized argumentation?
- Thoughtful discussion?
- Formats suitable for the journal (length, figures, references, sections) ?

“Learning the Ropes of Peer Reviewing”

by E. Pain, in *Science* Careers web site, August 15, 2008



- Assess scientific rigor, significance, relevance, originality
- Confirm that you -
 - Have the relevant technical knowledge
 - Can meet the time limit
 - Are free from conflicts of interest
- Support your opinions with evidence and clear arguments
- Offer advice for improvement
- Clarify which improvements are necessary, and which are optional
- Be kind and gracious to the author

“What Editors Want”

by L. Worsham, in the Chronicle of Higher Education, Sept. 8, 2008



- Only submit work appropriate for that journal.
- Replicate the style and tone of work from that journal in your own article.
- Follow the journal’s style guide and submission rules.
- Submit content free of errors.
- Place your work in the context of articles in the field.
- Accept rejection: “Competition is fierce, so maintain a positive attitude.”

L. Worsham is a professor of English.

Persistent misperceptions from the 'education' community:

- That Science will publish – *as an independently authored, citation-ready, research paper* – a short re-hash of a more extensive study published elsewhere.
- That education research - *but not other research sectors* – needs a 50-page paper for its presentation.
- That enthusiasm –*usually for their own project* - can replace data.
- That no-one else's research is good enough to publish.

Education content in SCIENCE



- SPORE: SCIENCE prize for Online Resources in Education
[Contact Melissa McCartney, mmcartne@aaas.org]
- Education Forum
[contact Brad Wible, bwible@aaas.org]
- Controversies, debates Policy analyses; advances/needs in standards, curriculum, assessment, institutions, professional development
- Special issues and Review articles
[contact Pam Hines, phines@aaas.org]
- Research papers
[contact Pam Hines, phines@aaas.org]
- News articles
[contact Jeff Mervis, jmervis@aaas.org]



SPORE – 2010: Science Prize for Online Resources in Education



To encourage - innovation and excellence in education
- the use of high-quality on-line resources by students

To recognize outstanding projects from all regions of the world

- Information at www.aaas.org/go/spore
- Contacts: Pam Hines (phines@aaas.org) and Melissa McCartney (mmcartne@aaas.org)
- First winner was published January 29, 2010

Rules for eligibility:

- Focused on science education [the “S” of “STEM”].
- Explicitly connected to the 4 strands of science learning.
- Resources freely available on the Internet.
- For students or teachers, precollege, college, or informal education.

Nominations open until

March 31, 2010

The four strands of science learning:

To know, use, and interpret scientific explanations of the natural world,

To generate and evaluate scientific evidence and explanations,

To understand the nature and development of scientific knowledge,

To participate productively in scientific practices and discourse.

Bruce Alberts, "Redefining Science Education,"

Science 23 January 2009: Vol. 323, p. 437

<http://www.sciencemag.org/cgi/content/full/323/5913/437>

From *Science* to the Classroom

Feedback?

What topics should we cover?

Components?

How would you use these items?

What student audiences?

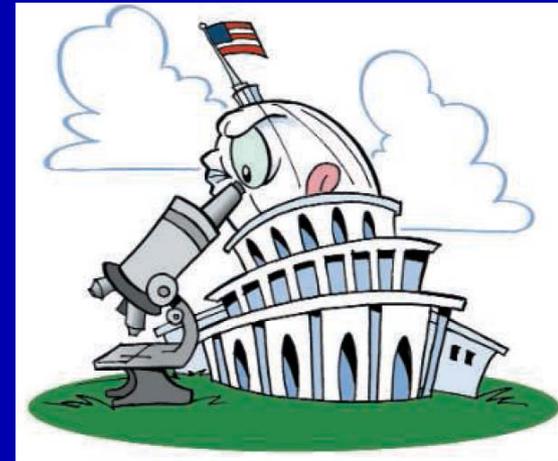
Curriculum connections?

Sustainability for Science?



The American Association for the Advancement of Science

**The next AAAS annual meeting:
Washington, D.C.
17-21 February 2011**



SCIENCE, 26 Aug 2005

And beyond that:

- Vancouver, Canada 16-20 February 2012
- Boston, MA 14-18 February 2013

AAAS seeks to advance science and innovation throughout the world for the benefit of all people.

<http://www.aaas.org/>