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Cross Section and Parity-Violating Spin Asymmetries of $W^{\pm}$ Boson Production in Polarized $p + p$ Collisions at $\sqrt{s} = 500$ GeV

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Collaborative Writing

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Department of Physics
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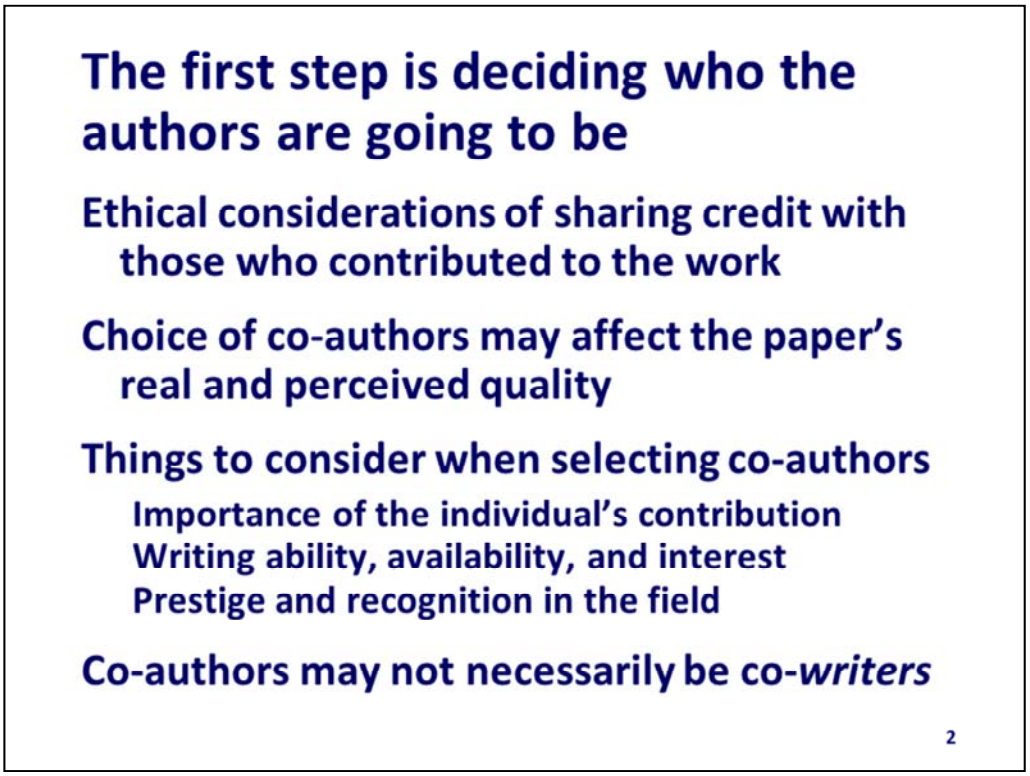
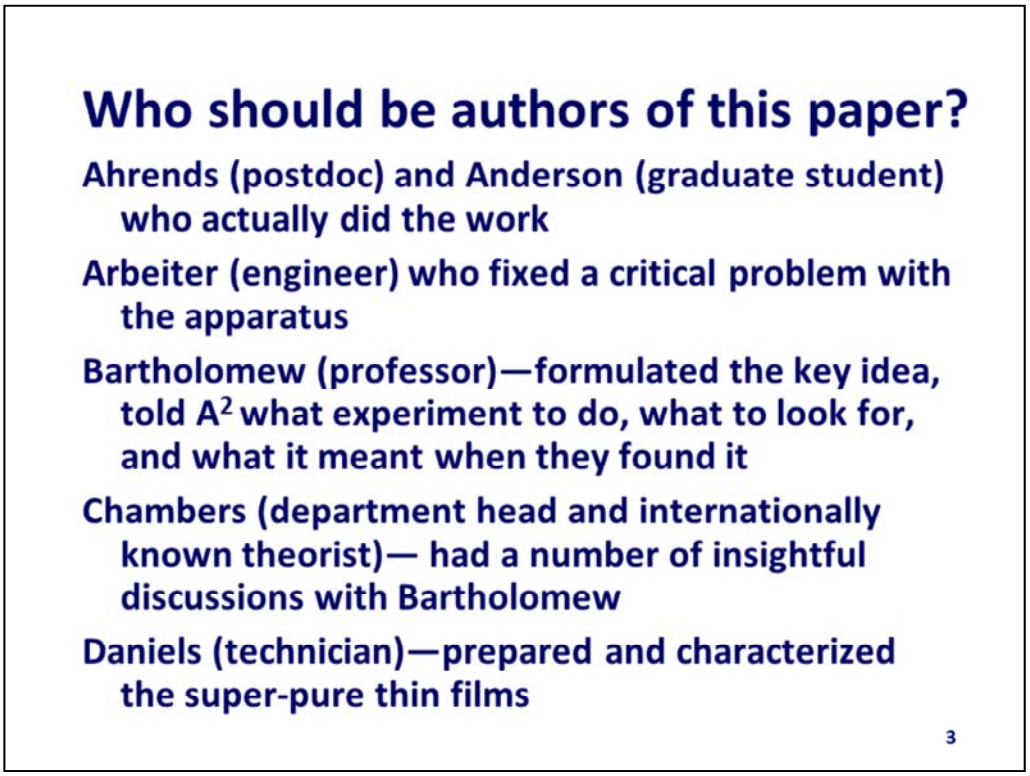


Generally, have those who contributed most to the success of the project, especially those who have solved major technical problems should be co-authors; lesser contributors are mentioned in the acknowledgments section.

Ideally, authors are named in descending order of their relative contributions, but practices vary widely among research disciplines and groups. Unless the list is obviously alphabetical, most readers will assume that the first author made the major contributions to the work.

Some journals are now requiring a detailed statement of the contributions that each author made to the work being reported. See, for example, the "Contributions" section of "Ultrahigh-resolution optical trap with single-fluorophore sensitivity" (http://www.nature.com/nmeth/journal/vaop/ncurrent/full/nmeth.1574.html).



This example is entirely fictitious.

Deciding the lead author is nontrivial; do you make it the most senior person, or the person who contributed the most important idea, or the person who did most of the work? Think about how future authors will cite it. "The fabrication method pioneered by *xxxx* et al." will sound ridiculous if you make one of the theorists (Bartholomew or Chambers) the lead author.

This paper reports on the fabrication of semiconducting thin films of CdSe to take exploit their tunable opto-electronic properties.

Chambers contributed several possible theoretical explanations to account for the unexpectedly long charge carrier lifetimes that were observed experimentally.

In addition, Ahrends stuck Anderson with most of the exacting work, but Ahrends needs to find a job and Anderson has several years of graduate school left. Chambers, who can be petty and vindictive, has an ego the size of an aircraft carrier. And Daniels, the only one of the group who doesn't have a Ph.D., has a permanent chip on his shoulder because he feels under-appreciated and overworked.

One solution to the problem might be multiple publications: Chambers can be lead author on a theoretical paper to *Phys. Rev. Lett.*; Anderson can be lead author on a paper to *J. Appl. Phys.*, Daniels can be lead author on a technical publication in *Optoelectronics* or a similar trade journal.

Why have multiple authors?

- More than one person did the work
- Subject is too large or too complex for one person
- Subject requires a variety of viewpoints or expertise
- Recognized "experts" add prestige and may assure wider readership

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Complications sometimes arise with multiple authorship

- Opposing judgments about manuscript length, emphasis, publication venue
- Differing writing styles
- Disputes about assignment of credit
- Time needed to resolve differences
- Dilution of responsibility

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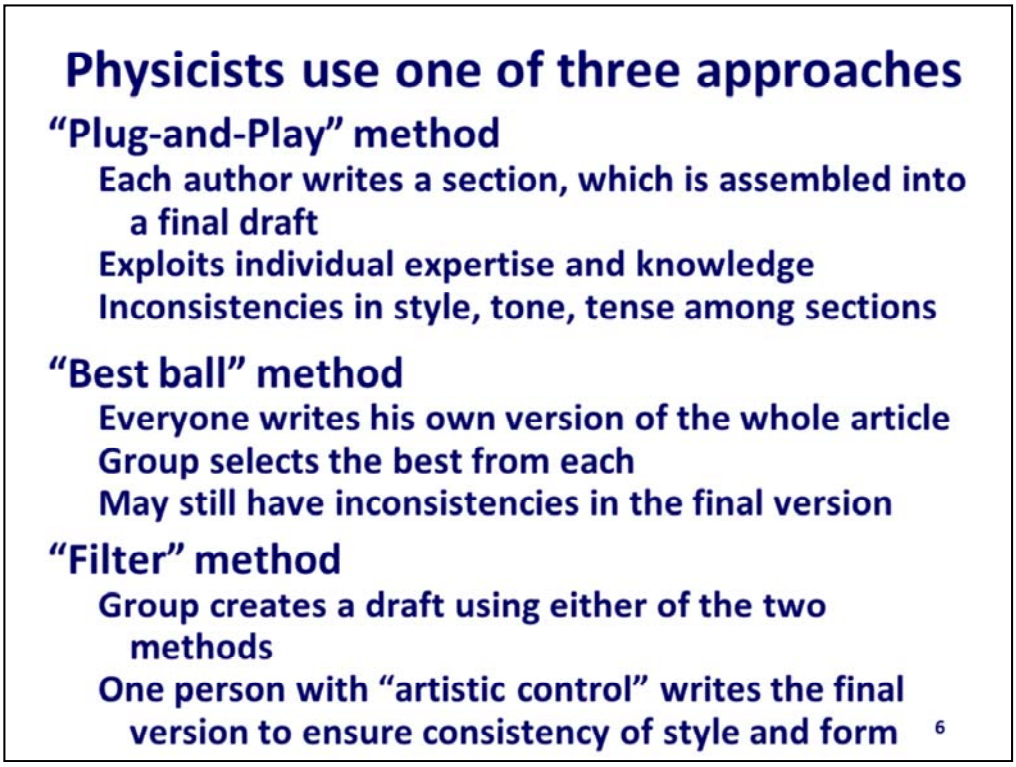


Some caveats:

The more people involved

The more time it takes.

The less any one person feels responsible for finishing.

The more coordination and integration is required.

Multiple authors may make it difficult to maintain consistent tone, style, word usage.

Joining individually written segments in one document can result in a disorganized, poorly written mess unless one person has editorial control.

Many authors preparing the entire document is usually least efficient and most time-consuming.

Steps to creating a collaborative paper

- Identify the tasks that must be done
  - Assign them to specific people
  - Set firm deadlines
- Establish a routing procedure
- Agree on a protocol for recording comments as the manuscript circulates
- Collect and circulate comments
- Discuss and make changes to the document
- Circulate the final draft for all authors' approval

7

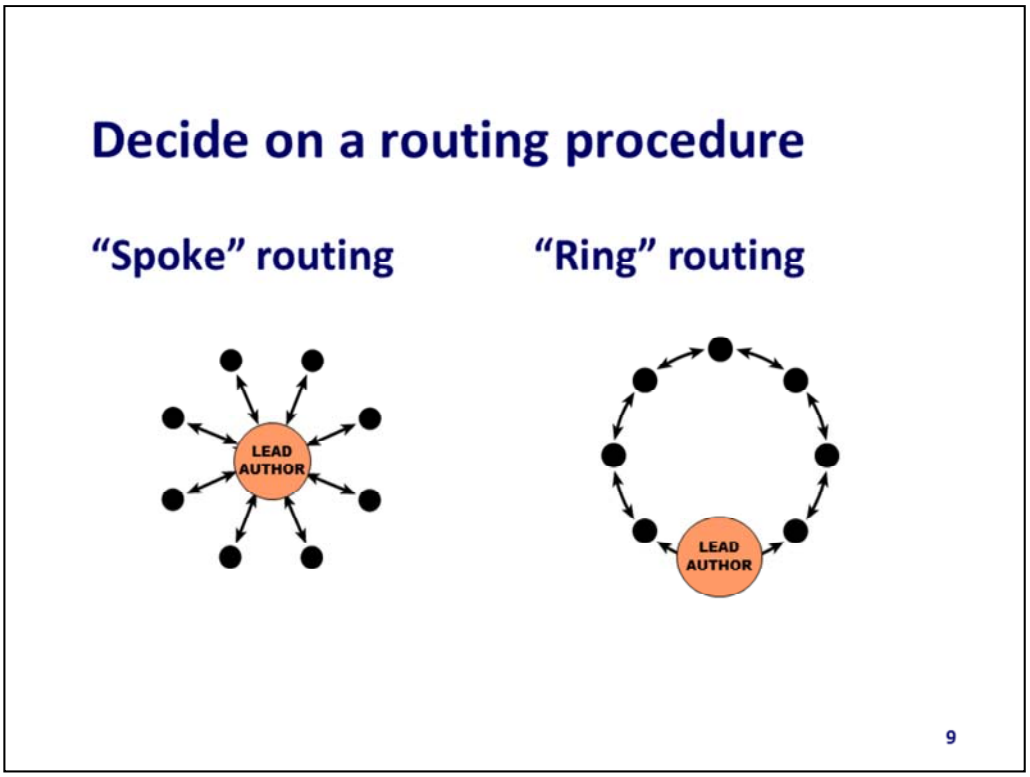
Team-Writing commandments

- Name a lead author who has final editorial control
- Limit the size of the team
- Strive for a mix of "thinkers" and "doers"
- Decide who has veto power
- Discuss upfront how to resolve conflicts

8

Limit the size of the team—eliminate upfront members who cannot, or will not, contribute.

Consider thanking some contributors in the "acknowledgments" section instead of making them co-authors.

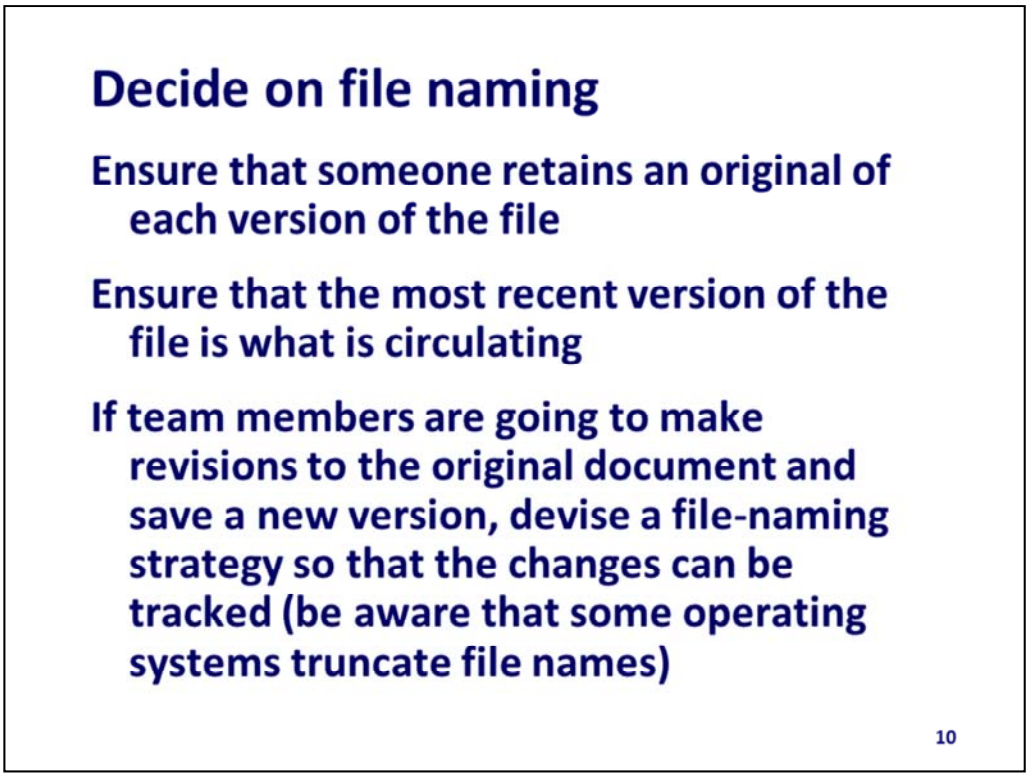


"Spoke" routing

Document goes to all members of the group at the same time.
Members make their comments and return the document to the originator.
Faster turnaround.
Somenone will have to incorporate all the comments into a single document for the next round.

"Ring" routing

- Document circulates to each member of the group successively.
- Each member revises the file, saves it under a new name, and passes it on to the next person in the group.
- File naming protocol very important.
- Considerably slower, as each person must wait for the ones earlier in the chain to complete their work.
- As the document moves, authors at the end of the chain may not have anything left to add to the document and will start commenting on the comments.

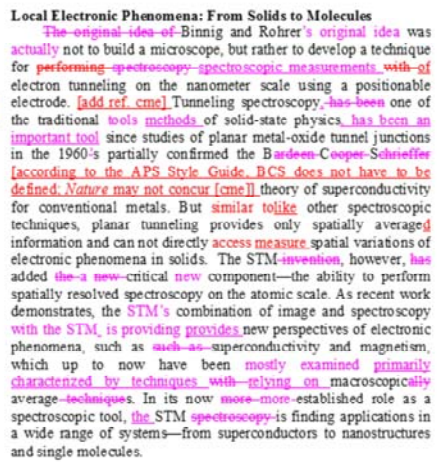


Some operating systems (Windows 3.x) will open files with long file names but then will truncate them to the first six characters, followed by a tilde and a number. If you've devised a file naming strategy that includes important information in longer file names, that information may be lost if someone with a incompatible system opens the file.

Decide on how you will comment

Commenting via email
- Someone in the group will have to collect and distill individual comments

Inserting comments directly into the text
- Original document may become very hard to read



Local Electronic Phenomena: From Solids to Molecules

~~The original idea of~~ Binnig and Rohrer's original idea was actually not to build a microscope, but rather to develop a technique for ~~performing spectroscopy~~ spectroscopic measurements ~~with~~ of electron tunneling on the nanometer scale using a positionable electrode. [add ref. cme] Tunneling spectroscopy, ~~has been~~ one of the traditional tools methods of solid-state physics, has been an important tool since studies of planar metal-oxide tunnel junctions in the 1960's partially confirmed the B~~ardeen Cooper Schrieffer~~ [according to the APS Style Guide, BCS does not have to be defined; *Nature* may not concur [cme]] theory of superconductivity for conventional metals. But similar to~~like~~ other spectroscopic techniques, planar tunneling provides only spatially averaged information and can not directly access measure spatial variations of electronic phenomena in solids. The STM ~~invention~~, however, has added ~~the a new~~ critical new component—the ability to perform spatially resolved spectroscopy on the atomic scale. As recent work demonstrates, the STM's combination of image and spectroscopy with the STM, is providing provides new perspectives of electronic phenomena, such as ~~such as~~ superconductivity and magnetism, which up to now have been mostly examined primarily characterized by techniques ~~with~~ relying on macroscopic~~ally~~ average ~~techniques~~. In its now ~~more~~ more established role as a spectroscopic tool, the STM ~~spectroscopy~~ is finding applications in a wide range of systems—from superconductors to nanostructures and single molecules.

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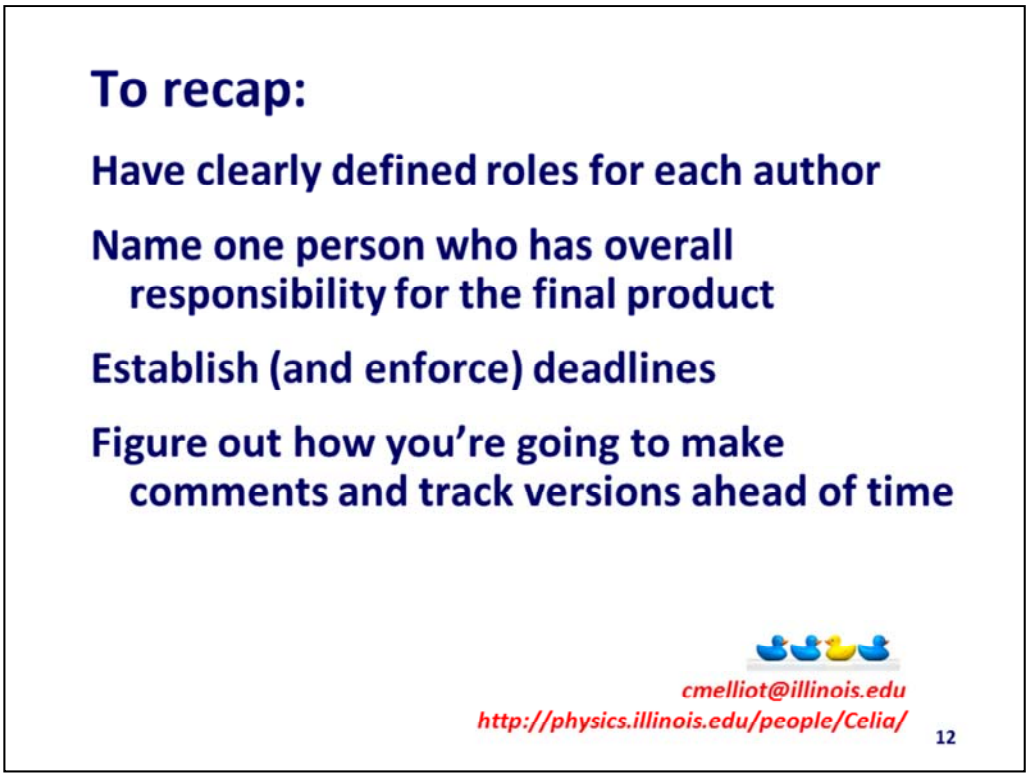

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