

## Salami Science: Are We Still Allowing It?

*Chair:*

**Arthur S Elstein**

University of Illinois  
Chicago, Illinois

**Carol Cadmus**

Integrated Communications Corporation  
Ridgewood, New Jersey

**Roy Pitkin**

*Obstetrics & Gynecology*  
Los Angeles, California

**Della Mundy**

Kaiser Foundation Research Institute  
Oakland, California

*Reporter:*

**Carrie McDowell**

*Proceedings of Oklahoma Academy of Science*  
Tulsa, Oklahoma

Salami science is reporting the results of a single study in 2 or more manuscripts. Although the practice is not necessarily bad science (a point on which not all the panelists agreed), it is a problem because it wastes valuable and limited resources. For journals, it wastes paper; for reviewers, it takes up time that could be used to evaluate studies that present new data; and for readers, it wastes time that could be spent in reading about new research.

What motivates authors to slice their studies so thinly that they can create several

manuscripts from a single study? The panelists offered 3 possible reasons. First, many authors, especially in the academic world, face the pressure to publish or perish. If researchers supported by colleges and universities do not publish, they can lose their standing, their potential tenure, and possibly even their jobs. In response to the pressure, some researchers publish more than one paper per study.

Second, researchers need to fund their projects by applying for grants. All too often grant reviewers judge the potential success of applicants by the numbers of their publications, not necessarily by the merits of the publications or the grant proposals. To increase their appeal to grant reviewers, authors might inflate the numbers of publications they have to their credit.

Third, to obtain a patent or to protect the financial interests of an existing drug about to lose its patent, pharmaceutical companies might have a financial incentive to show that a drug has more support in the literature than it actually has. Publishing papers, each citing different parts of the same study, can inflate the amount of data from that study, making it seem as though there is more support than there really is.

Occasionally splitting a study into several papers might be justified. The panelists suggested that salami science be studied by editors and reviewers case by case, and they offered 2 possible scenarios. One commonly cited justification of salami science

is the needs of different audiences. For example, part of a study might be valuable to one audience—say, experimenters—and another part might appeal more to a different audience—say, clinicians. If the paper were not sliced up and published twice, one or the other group of readers might miss valuable data. Another possible justification is that a manuscript is too large to publish as a single paper. For example, a journal has limited resources and cannot publish the paper in its entirety, or the study would be more digestible if reported in 2 or more papers.

Panelists agreed that although sometimes justified, salami science more often than not wastes valuable resources and distorts the truth, is never acceptable in the pharmaceutical industry, and should be discouraged.

So what is the way to end salami science? The panelists offered 2 possible solutions. First, journal editors should state in their instructions for authors that their journals will generally not accept more than 1 paper from the same study. Second, authors should disclose all possible duplicate publications, published abstracts, similar papers, and parts of the same study that have been published elsewhere (or that the whole study has been published elsewhere). One panelist advised authors to send copies of any duplicate publications with their new manuscript when submitting it to a journal. 