

When should you offer a statistician co-authorship on a paper? Authorship of papers can become a thorny issue and it is valuable to have worked out something beforehand. Firstly it should be stated that a lot of CSTAR's work with clients *does not* warrant authorship. No one involved in CSTAR is trying to muscle in and claim authorship for everything they do but, if the contribution warrants it, authorship is expected.

Nor does the fact that CSTAR is being paid for its work preclude authorship. The degree of intellectual or scientific contribution to a paper should be considered irrespective of payment.

According to the guidelines of the International Committee of Medical Journal Editors (1) Authorship credit should be based on meeting all of the following four conditions

- 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data.
- 2) drafting the article or revising it critically for important intellectual content.
- 3) final approval of the version to be published.
- 4) agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The last three conditions are fairly obvious but the question arises as to what 'substantial contribution' means.

CSTAR does not consider that, for instance, the contribution to the study design of a straight forward sample size calculation is in itself sufficient to warrant authorship. On the other hand a major input into the whole study design – perhaps changing an initial protocol drastically – together with sample size estimation and a statistical analysis plan would often be considered to be a 'substantial' contribution. Just advising on what standard approaches might be taken for a data analysis, or just interpreting results generated by the researcher would not usually be considered substantial either.

A checklist, reproduced on the next page, has been suggested and it certainly provides a good 'rule of thumb' (2). Points are given to a number of criteria and a total contribution score is calculated. Cut points have been suggested for this score to determine whether authorship is warranted. CSTAR feels that this checklist should be used as a guideline to determine whether a statistical consultant should be offered co-authorship in a project he/she was involved in.

- (1) <http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>
- (2) Parker RA, Berman NG. Criteria for Authorship for Statisticians in Medical Papers. *Stat Med.* 1998; 17:2289-99

APPENDIX: CHECKLIST OF STATISTICAL CONTRIBUTIONS TO STUDY

Activity	Points	Involved	
<i>Study design</i>			
Substantive input into the overall design of the study and protocol development ('thinking through a study')	4	Yes	No
Writing one or more sections of the grant application (data analysis, data management)	2	Yes	No
Overall review of grant application prior to submission	1	Yes	No
<i>Implementation</i>			
Regular (ongoing) participation in study meetings with the other investigators	4	Yes	No
Implementation of data collection and data management activities, including monitoring and supervision of data collection staff	2	Yes	No
Advising only on specific issues when requested by the principal investigator ('answers only specific questions')	1	Yes	No
<i>Analysis</i>			
Planning and directing the analyses; this is usually based on the analysis plan described in the grant but now includes exact model specification, resolution at decision points, etc.	4	Yes	No
Preparing written material summarizing the results of the analyses for the other investigators and/or preparing formal reports	2	Yes	No
Doing the analyses	1	Yes	No
Total points	_____		
Authorship criterion			
8 or more points:	Yes		
6-7 points:	Possibly		
5 or fewer points:	No		

This checklist is taken from:
Parker RA, Berman NG. Criteria for Authorship for Statisticians in Medical Papers. *Stat Med.* 1998; 17:2289-99