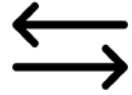


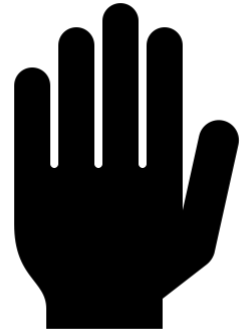
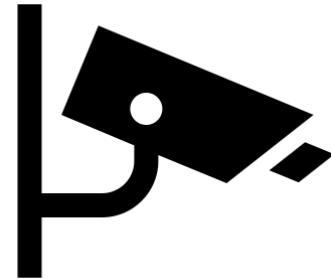
Responsible Authorship

Siu-wai Leung, PhD FRSB FRSPH





Trust *vs.* verification



ICMJE's criteria for authorship

The ICMJE recommends that authorship be based on the following 4 criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
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.

Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals

Updated December 2018

<http://www.icmje.org/icmje-recommendations.pdf>

including authorship

In addition to being accountable for the parts of the work he or she has done, an author should be able to identify which co-authors are responsible for specific other parts of the work. In addition, authors should have confidence in the integrity of the contributions of their co-authors.

Difficult to check without tools

Criteria in logical form

- ❑ Planning (→ study protocol)
 - ❑ conception, or
 - ❑ design
- ❑ Data (→ results and conclusion)
 - ❑ acquisition, or
 - ❑ analysis, or
 - ❑ interpretation
- ❑ Intellectual content (→ manuscript)
 - ❑ drafting, or
 - ❑ revising
- ❑ Accountability for ALL aspects

(conception **OR** design)
AND
(acquisition **OR** analysis **OR**
interpretation)
AND
(drafting **OR** revising)
AND
(accountability)

Criteria as expressed in Excel

Authorship-checklist												
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	A	B	C	D	E	F	G	H	I	J	K	L
1												
2	Author		Plan/protocol		Data			Manuscript			Overall	Authorship
3	Name	Abbr	Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability	Eligibility
4	Walter Leung	WL	TRUE						TRUE	TRUE	TRUE	----
5	Qing Leung	QL		TRUE		TRUE			TRUE	TRUE	TRUE	YES
6	Linda Leung	LL		TRUE	TRUE				TRUE	TRUE	TRUE	YES
7	John Leung	JL		TRUE			TRUE	TRUE	TRUE	TRUE	TRUE	YES

Big Five journals as examples?

Authorship policies

- ❑ All subscribed ICMJE in principle
- ❑ NEJM did not publish authorship statements while other four journals did

Authorship statements

- ❑ Some authors did not meet the authorship criteria
- ❑ Allowed exceptions or did not check authorship statements?

NEJM

- Substantial contributions to conception and design; or acquisition, analysis, or interpretation of data
- Drafting of the article or critical revision for important intellectual content
- Final approval of the version to be published
- 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 article are appropriately investigated and resolved

Ann Int Med

Annals follows the International Committee of Medical Journal Editors recommendations for defining authors and contributors (see: www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html). The ICMJE recommends basing authorship on the following 4 criteria: Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND drafting the work or revising it critically for important intellectual content; AND final approval of the version to be published; AND 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.

Lancet

- Designated authors should meet all four criteria for authorship in the [ICMJE Recommendations](http://www.icmje.org)
- We ask all authors, and all contributors (including medical writers and editors), to specify their individual contributions at the end of the text
- We encourage collaboration and coauthorship with colleagues in the locations where the research is conducted
- When choosing coauthors, we ask lead authors to be mindful of the benefits of diversity in authorship and to consider inviting

ICMJE Recommendations
<http://www.icmje.org>

BMJ

The BMJ follows The International Committee of Medical Journal Editors Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals ([ICMJE Recommendations 2018](http://www.icmje.org)) with regards to authorship, contributorship and group authorship.

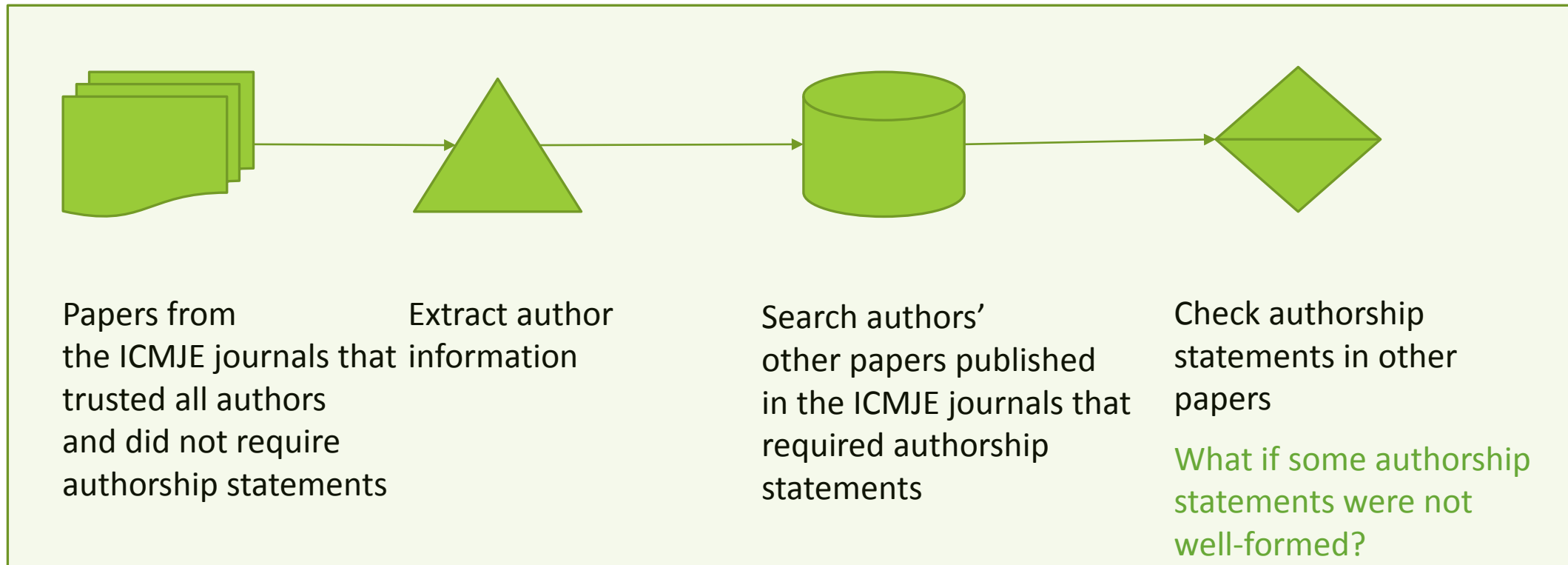
JAMA

Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.² One or more authors should take responsibility for the integrity of the work as a whole, from inception to published article. According to the guidelines of the International Committee of Medical Journal Editors (ICMJE),⁴ authorship credit should be based on the following 4 criteria:

1. substantial contributions to conception or design of the work, or the acquisition, analysis, or interpretation of data for the work; and
2. drafting of the work or revising it critically for important intellectual content; and
3. final approval of the version to be published; and
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.

- Substantial contributions to conception and design; or acquisition, analysis, or interpretation of data
- Drafting of the article or critical revision for important intellectual content
- Final approval of the version to be published
- 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 article are appropriately investigated and resolved

No authorship statements were published



Lancet

- Designated authors should meet all four criteria for authorship in the [ICMJE Recommendations](http://www.icmje.org)
- We ask all authors, and all contributors (including medical writers and editors), to specify their individual contributions at the end of the text
- We encourage collaboration and coauthorship with colleagues in the locations where the research is conducted
- When choosing coauthors, we ask lead authors to be mindful of the benefits of diversity in authorship and to consider inviting

Contributors

S-EA-B had the original idea, designed the study, was responsible for protocol development, wrote the report, and did the literature search. MG developed the figures. CP was responsible for project management. All authors except CP, MG, and FSO recruited patients into the study and collected data. All authors contributed to data interpretation and contributed to revising the manuscript.

Abbr	Plan/protocol		Data			Manuscript			Overall	Authorship
	Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability	Eligibility
S-EA-B	TRUE	TRUE	TRUE		TRUE	TRUE	TRUE	YES if APPROVED and ACCOUNTABLE		
MG				TRUE	TRUE		TRUE			-----
CP					TRUE		TRUE			-----
FSO					TRUE		TRUE			-----

Author Contributions: ■■■ Ju■■■ and ■■■ Ho■■■ had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Jus■■■, Al■■■, Ho■■■, Sch■■■

Acquisition, analysis, or interpretation of data: Ju■■■.

Drafting of the manuscript: Ju■■■, Al■■■, Ho■■■, Sc■■■.

Critical revision of the manuscript for important intellectual content: Ju■■■, Al■■■, Ho■■■, Sc■■■.

Administrative, technical, or material support: Ho■■■.

	Plan/protocol		Data			Manuscript			Overall	Authorship
Abbr	Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability	Eligibility
Ju	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	YES if APPROVED and ACCOUNTABLE	-----	-----
Ho	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE	YES if APPROVED and ACCOUNTABLE	-----	-----
Al	TRUE	TRUE				TRUE	TRUE			-----
Sc	TRUE	TRUE				TRUE	TRUE			-----

Contributors: LQ and HM conceived and designed the study. HM performed the statistical analysis. HM and LQ wrote the first draft of the manuscript. All the authors participated in the interpretation of the results and critical revision of the manuscript. LQ had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis; he is the guarantor. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

	Plan/protocol		Data			Manuscript			Overall	Authorship
Abbr	Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability	Eligibility
LQ	TRUE	TRUE	TRUE		TRUE	TRUE	TRUE		TRUE	YES-if-APPROVED
HM	TRUE	TRUE		TRUE	TRUE	TRUE	TRUE	YES if APPROVED and ACCOUNTABLE		

Annals Int Med

Annals follows the International Committee of Medical Journal Editors recommendations for defining authors and contributors (see: www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html). The ICMJE recommends basing authorship on the following 4 criteria: Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND drafting the work or revising it critically for important intellectual content; AND final approval of the version to be published; AND 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.

Author Contributions: Conception and design: J.L. [REDACTED], L.H. [REDACTED], K. [REDACTED], J.D. [REDACTED]

Analysis and interpretation of the data: J.L. [REDACTED], L.H. [REDACTED], A. [REDACTED], J. [REDACTED], K. [REDACTED], J.D. [REDACTED]

Drafting of the article: J.L. [REDACTED], A. [REDACTED], J.D. [REDACTED]

Critical revision of the article for important intellectual content: J.L. [REDACTED], L.H. [REDACTED], A. [REDACTED], J.D. [REDACTED]

Final approval of the article: J.L. [REDACTED], L.H. [REDACTED], A. [REDACTED], J. [REDACTED], K. [REDACTED], J.D. [REDACTED]

Statistical expertise: J.L. [REDACTED], L.H. [REDACTED]

Obtaining of funding: J.L. [REDACTED], A. [REDACTED]

Administrative, technical, or logistic support: J.L. [REDACTED], A. [REDACTED]

Collection and assembly of data: J.L. [REDACTED], J. [REDACTED], J.D. [REDACTED]

	Plan/protocol		Data			Manuscript			Overall	Authorship
Abbr	Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability	Eligibility
JL	TRUE	TRUE		TRUE	TRUE	TRUE	TRUE	TRUE	YES if ACCOUNTABLE	-----
LH	TRUE	TRUE		TRUE	TRUE		TRUE	TRUE	YES if ACCOUNTABLE	-----
K	TRUE	TRUE		TRUE	TRUE			TRUE		-----
JD	TRUE	TRUE		TRUE	TRUE	TRUE	TRUE	TRUE	YES if ACCOUNTABLE	-----
A				TRUE	TRUE	TRUE	TRUE	TRUE		-----
J				TRUE	TRUE			TRUE		-----

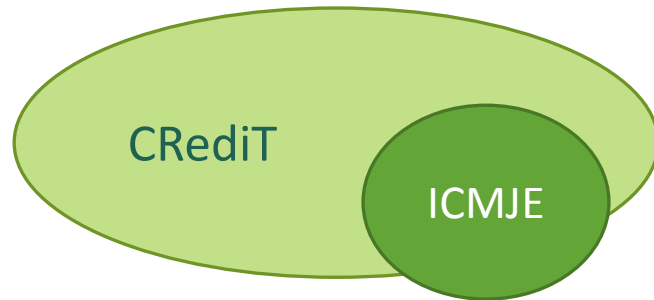
Vocabulary, taxonomy, ontology

ICMJE

Plan/protocol		Data			Manuscript			Overall
Conception	Study design	Acquisition	Analysis	Interpretation	Drafting	Revision	Approval	Accountability

CRedit (Contributor Roles Taxonomy)

CRO (Contributor Roles Ontology)



<https://www.casrai.org/credit.html>

1	Conceptualization	8	Resources
2	Data curation	9	Software
3	Formal analysis	10	Supervision
4	Funding acquisition	11	Validation
5	Investigation	12	Visualization
6	Methodology	13	Writing – original draft
7	Project administration	14	Writing – review & editing

Why Most Published Research Findings Are False

John R. A. Ioannidis

Summary

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding is less likely to be true when the studies conducted in a field are smaller, when effect sizes are smaller, when there is a greater number and lesser preselection

factors that influence this problem and some corollaries thereof.

Modelling the Framework for False Positive Findings

Several methodologists have pointed out [9–11] that the high rate of nonreplication (lack of confirmation) of research discoveries is a consequence of the convenient, yet ill-founded strategy of claiming conclusive research findings solely on the basis of a single study assessed by formal statistical significance, typically for a p -value less than 0.05. Research

is characteristic of the field and can vary a lot depending on whether the field targets highly likely relationships or searches for only one or a few true relationships among thousands and millions of hypotheses that may be postulated. Let us also consider, for computational simplicity, circumscribed fields where either there is only one true relationship (among many that can be hypothesized) or the power is similar to find any of the several existing true relationships. The pre-study probability of a relationship being true is $R/(R + 1)$. The probability

of a true relationship being discovered is $R/(R + 1) \times \text{power}$. The probability of a false relationship being discovered is $1/(R + 1) \times \text{power}$. The probability of a true relationship not being discovered is $1/(R + 1) \times \text{power}$. The probability of a false relationship not being discovered is $R/(R + 1) \times \text{power}$.

for a false relationship being discovered is $1/(R + 1) \times \text{power}$. Research findings are more likely to be true when the studies conducted in a field are smaller, when effect sizes are smaller, when there is a greater number and lesser preselection

of a true relationship being discovered is $R/(R + 1) \times \text{power}$. The probability of a false relationship being discovered is $1/(R + 1) \times \text{power}$. The probability of a true relationship not being discovered is $1/(R + 1) \times \text{power}$. The probability of a false relationship not being discovered is $R/(R + 1) \times \text{power}$.

Repeat ... until compliance

Please closely follow the ICMJE authorship guideline and accordingly declare the authors' contributions:

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

Please note the connective **AND** in the authorship criteria. You may consider acknowledging the contributions of the persons who are not qualified to be authors, instead of including them as authors.

Authorship order – decision matrix?

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Home

Please indicate below total number of the individuals involved in this project

Project title:

Number of individuals:

Next

Decision Matrix and Priorities to: all parametres

<input checked="" type="radio"/> Conception_Design <input type="radio"/> Acquisition_Data	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
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<input checked="" type="radio"/> Conception_Design <input type="radio"/> Critically_Revising	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
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<input checked="" type="radio"/> Analysis_Interpetation <input type="radio"/> Critically_Revising	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
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Calculate Results

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Home

Indicate below by ticking on the radio buttons which individual contribute

Study contributions

Conception and design¹

Acquisition of data

Analysis and interpretation of data

Drafting the manuscript

Critically revising the manuscript

Approval of the manuscript to be submitted to the journal²

WL QL LL JL

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

Next

Reset

Order of authors
JL, LL, QL, WL

Analytical results

Names	Ranking	Ranking %
JL	0.4333	43.33
LL	0.3333	33.33
QL	0.2333	23.33

<http://authorships.org>

APA Scoreboard

Activity Category	Total Points	Contributor Score				
		Initials				
Conceptualizing a research idea	90					
Refining/ crystalizing a research idea	60					
Literature search: Summarizing literary pieces (e.g., articles, book chapters, etc.)	20					
Creating a research design (e.g., counterbalancing, randomization to conditions, survey design etc.)	80					
Selecting an Instrument/ a measure: Instrument construction	30					
Selection of statistical tests/analyses	40					
Performing statistical analyses and computations (including computer work)	40					
Interpretation of statistical analyses	80					

Authorship matrix

	Ideas 0.2 (%)	Work 0.3 (%)	Writing 0.35 (%)	Stewardship 0.15 (%)	Net contribution/ responsibility (%)
Johnson (graduate student)	5	55	35	0	29.8
Norman (technician)	15	10	5	10	9.3
Jones (post-doc)	25	27	35	10	26.9
Fonda (associate professor)	15	0	5	30	9.3
Peter (professor/guarantor)	40	8	20	50	24.9
Balance check	100	100	100	100	100

Avoiding authorship disputes

- ❑ Set or admit authorship [order] criteria BEFORE starting the study
- ❑ Try to meet the authorship criteria DURING the study
- ❑ Keep all records of the study and contributions
- ❑ Clarify your intention and expectation to be an author, the first author, or the corresponding author
- ❑ Negotiate and resolve authorship order using available tools
- ❑ Try to participate in the authorship assignment as all authors are responsible

Disputes

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