



SOM Authorship Guidelines, Updates to the ICMJE Uniform Requirements for Scholarship, and the Emerging Role of Social Media in Monitoring Scholarship

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SOM Authorship Guidelines

- The VCU SOM has adopted and follows the Authorship Recommendations from the International Committee of Medical Journal Editors (ICMJE), *Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals.*, updated December 2014 (referred to as *Uniform Recommendations*).

Purpose of the Recommendations: *ICMJE developed these recommendations to review best practice and ethical standards in the conduct and reporting of research and other material published in medical journals, and to help authors, editors, and others involved in peer review and biomedical publishing create and distribute accurate, clear, **reproducible**, unbiased medical journal articles. The recommendations may also provide useful insights into the medical editing and publishing process for the media, patients and their families, and general readers.*

SOM Authorship Guidelines

- The full text of the ICMJE *Recommendations* may be accessed at:
<http://www.icmje.org/index.html#about>
- The downloadable PDF is located at:
<http://www.icmje.org/icmje-recommendations.pdf>
- Specific narrative that deals with defining the Role of Authors and Contributors may be found on pp. 2-3 of the current PDF.
- To review list of journals that follow the ICMJE *Recommendations* go to:
<http://www.icmje.org/journals-following-the-icmje-recommendations/>

Highlights of Updates

- Generally, the updates clarify that it is the responsibility of the authors to be transparent about the research and writing process, disclose conflicts and any issues with the study, and that all authors are accountable for the entire study.
- Remember - these are written by journal editors who would prefer these issues are addressed before submission and publication. It is difficult and expensive for journals to manage disputes, corrections and retractions.

Highlights of Updates

Author Responsibilities - COI

Strengthening of language around study sponsorship/conflict of interest, from “*may represent a conflict of interest and should be avoided*” to “*authors should avoid*”

Protection of Research Participants

In addition to IRB approval, now states:

“*Approval by a responsible review committee does not preclude authors from forming their own judgment whether the conduct of the research was appropriate*”

Highlights of Updates

Corrections and Version Control

was:

Errors serious enough to invalidate a paper's findings may require retraction.

now:

Errors serious enough to invalidate a paper's results and conclusions may require retraction.

Highlights of Updates

Correspondence

Responsible debate, critique and disagreement are important features of science, and journal editors should encourage such discourse ideally within their own journals about the material they have published. Editors, however, have the prerogative to reject correspondence that is irrelevant, uninteresting, or lacking cogency, but they also have a responsibility to allow a range of opinions to be expressed and to promote debate.

New language underlined

Highlights of Updates

Publishing and Editorial Issues: Fees

- *Journals should be transparent about their types of revenue streams. Any fees or charges that are required for manuscript processing and/or publishing materials in the journal shall be clearly stated in a place that is easy for potential authors to find prior to submitting their manuscripts for review or explained to authors before they begin preparing their manuscript for submission.*

New language underlined

Highlights of Updates

Manuscript Preparation and Submission: Methods

- *Methods section should aim to be sufficiently detailed such that others with access to the data would be able to reproduce the results.*
- *If an organization was paid or otherwise contracted to help conduct the research (examples include data collection and management), then this should be detailed in the methods.*
- *The Methods section should include a statement indicating that the research was approved or exempted from the need for review by the responsible review committee (institutional or national). If no formal ethics committee is available, a statement indicating that the research was conducted according to the principles of the Declaration of Helsinki should be included.*

All new language

Highlights of Updates

References:

- *References should not be used by authors, editors, or peer reviewers to promote self-interests*

All new language

Highlights of Updates

Sending the Submission:

- *The (cover letter or submission form) should inform editors if concerns have been raised (e.g., via institutional and/or regulatory bodies) regarding the conduct of the research or if corrective action has been recommended.*

All new language



SOM (ICMJE) Authorship Guidelines

“Who is an Author?”

This is a commonly raised issue leading to hard feelings and/or formal complaints.

This should be discussed as soon as a plan for publishing papers begins, and revisited throughout the writing process.

Transparency and accountability are key.

SOM (ICMJE) Authorship Guidelines

II.A.2. All authors must meet all 4 criteria for authorship:

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.*

Who is an Author?

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.

Emerging Role of Social Media in Monitoring Scholarship

- PubPeer.com
- retractionwatch.com

Electronic access (Pub Med) and on-line forums make it much easier for scientists to (often anonymously) discuss published scholarly work and raise concerns.

Retraction Watch was started in August 2010 by two medical reporters and features a moderated comment site as well as nearly daily blog posts about current issues in research ethics.

PubPeer.com was founded in 2012 to support post-publication discussion, often lacking on journal websites. If you are a first or last author on an article indexed in Pub Med you can sign up for an account on PubPeer.com.

Emerging Role of Social Media in Monitoring Scholarship

From pubpeer.com

- **PubPeer** seeks to create an online community that uses the publication of scientific results as an opening for fruitful discussion among scientists. With PubPeer, scientists can comment on almost any scientific article published with a DOI or preprint in the arXiv.
- All comments are consolidated into a **centralized** and searchable online database.
- Authors, as well as a small group of peers working on similar topics, are **automatically notified when their article is commented on**.
- Pubpeer strives to maintain a high standard of commentary by inviting **first and last authors** of published articles to post comments.
- The chief goal of this project is to provide the means for scientists to work together to improve research quality, as well as to create improved transparency that will enable the community to identify and bring attention to important scientific advancements.
- PubPeer started from the lack of post-publication peer discussion on journal websites. Thus was born an idea for a website where open peer review was not intimidating to users, while maintaining the rigor and anonymity of the closed review process currently used by the major journals. The site has been put together by a diverse team of early-stage scientists in collaboration with programmers who have collectively decided to remain anonymous in order to avoid personalizing the website, and to avoid circumstances in which involvement with the site might produce negative effects on their scientific careers.

<https://pubpeer.com/about>

Emerging Role of Social Media in Monitoring Scholarship

EXAMPLE:

Nature Nanotechnology 8, 452–458 (2013) doi:10.1038/nnano.2013.71

DNA sequencing using electrical conductance measurements of a DNA polymerase Yu-Shiun Chen, Chia-Hui Lee, Meng-Yen Hung, Hsu-An Pan, Jin-Chern Chiou & G. Steven Huang

The development of personalized medicine—in which medical treatment is customized to an individual on the basis of genetic information—requires techniques that can sequence DNA quickly and cheaply. Single-molecule sequencing technologies, such as nanopores, can potentially be used to sequence long strands of DNA without labels or amplification, but a viable technique has yet to be established. Here, we show that single DNA molecules can be sequenced by monitoring the electrical conductance of a phi29 DNA polymerase as it incorporates unlabelled nucleotides into a template strand of DNA. The conductance of the polymerase is measured by attaching it to a protein transistor that consists of an antibody molecule (immunoglobulin G) bound to two gold nanoparticles, which are in turn connected to source and drain electrodes. The electrical conductance of the DNA polymerase exhibits well-separated plateaux that are ~ 3 pA in height. Each plateau corresponds to an individual base and is formed at a rate of ~ 22 nucleotides per second. Additional spikes appear on top of the plateaux and can be used to discriminate between the four different nucleotides. We also show that the sequencing platform works with a variety of DNA polymerases and can sequence difficult templates such as homopolymers.

Emerging Role of Social Media in Monitoring Scholarship

Pubpeer.com sample comments

From the Nat. Nano. webpage of this paper - "Editorial note: significant concerns have been raised about the validity of the data reported in this work. After an internal inquiry, we contacted the authors' institution, the National Chiao Tung University, and asked them to launch a formal investigation into the matter. This investigation is now underway."

Now it seems the authors have given some excuses during this investigation; they claimed that the experiment was carried out somewhere in Tainan w/o detailed address (only know it's in a Southern-Taiwan city), the whole lab was set up in some sort of "container houses". The first author said he has no idea if there is electromagnetic shielding or not; he doesn't even know what equipment was used for testing and what type of gas used for cooling (liquid nitrogen or liquid helium); the only thing he knows it is the computer brand for recording data, which is "Dell".

The authors claim they did make the sample in NCTU then sent it over to this lab for testing, and the guy (named Steve) who did all the tests didn't allow the authors to get the original data and does not want his name on the paper.. [source from the Taiwan local news link shown below (in Chinese): <http://www.stormmediagroup.com/opencms/news/detail/e9e01643-64db-11e4-a007-ef2804cba5a1/?uuid=e9e01643-64db-11e4-a007-ef2804cba5a1>] Anyone knows anything more? Especially about the scientific side in this paper.

Verbatim comments from PubPeer.com

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PubPeer.com sample comments

Peer 1: (November 9th, 2014 5:58pm UTC) Woah!!! This paper claims to perform sequencing of a single molecule of DNA by measuring the conductance of a polymerase molecule attached to a transistor as a DNA strand is duplicated. The processing of each nucleotide is reported to be associated with pA-size currents with specific temporal signatures. [Edit: some of my questions are answered by reading this previous article from the same author DOI: 10.1038/NNANO.2012.7 ; I'll indicate those with interleaved comments] Here are a few remarks/questions.

A FET transistor CONDUCTS between source and drain as a function of gate voltage. Since the antibody/polymerase complex bridges source and drain terminals, it is therefore in parallel with a conductor. The authors have therefore REDUCED the sensitivity of their measurement. They could just have measured the current between two electrodes and obtained less noise. No need at all for the transistor. Any amplification would almost certainly require an attachment to the gate. [It seems that there is no semiconductor transistor, the transistor is simply formed by the protein.]

Verbatim comments from PubPeer.com

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PubPeer.com sample comments

Can we see the electrical characteristics of the transistor? The 3V (with respect to drain or source?) should not cause transistor conduction if pAs through the polymerase are to be detected, but this isn't established. [The electrical characteristics are given in the previous paper DOI: 10.1038/NNANO.2012.7] 9V applied between drain and source will generate a rather huge field given the small spacing between electrodes. Would the protein survive that? Go to Article PDF Get alerts for new activity Invite others to the conversation Internal links: - A protein transistor made of an antibody molecule and two gold nanoparticles - Highly controversial Nature Group papers PubPeer Blog Recent Featured Journals About FAQ MyPubPeer Topics Login Search publications, DOI's, authors... Do proteins conduct such large currents? 3pA is larger than the current through the specialised pores of many ion channels. The source and drain are supposedly bridged by the two arms of one antibody, which is presumably bound to one arm (incorrectly drawn) of the other antibody, which is crosslinked to the polymerase (see Fig. 1 a). It seems very unlikely that the conductance of the polymerase would be measured in this arrangement, more like the conductance of the two arms of the antibody.

Verbatim comments from PubPeer.com

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RETRACTED, JUNE 2015

Nature Nanotechnology 8, 452–458 (2013) doi:10.1038/nnano.2013.71

DNA sequencing using electrical conductance measurements of a DNA polymerase
Yu-Shiun Chen, Chia-Hui Lee, Meng-Yen Hung, Hsu-An Pan, Jin-Chern Chiou & G.
Steven Huang

Nature Nanotechnology 8, 452–458 (2013) doi:10.1038/nnano.2013.71 Received 24
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online 11 July 2013 Corrected online 28 August 2013 Retracted online 03 June
2013 Erratum (August, 2013)

The development of personalized medicine—in which medical treatment is customized to an individual on the basis of genetic information—requires techniques that can sequence DNA quickly and cheaply. Single-molecule sequencing technologies, such as nanopores, can potentially be used to sequence long strands of DNA without labels or amplification, but a viable technique has yet to be established. Here, we show that single DNA molecules can be sequenced by monitoring the electrical conductance of a phi29 DNA polymerase as it incorporates unlabelled nucleotides into a template strand of DNA. The conductance of the polymerase is measured by attaching it to a protein transistor that consists of an antibody molecule (immunoglobulin G) bound to two gold nanoparticles, which are in turn connected to source and drain electrodes. The electrical conductance of the DNA polymerase exhibits well-separated plateaux that are ~3 pA in height. Each plateau corresponds to an individual base and is formed at a rate of ~22 nucleotides per second. Additional spikes appear on top of the plateaux and can be used to discriminate between the four different nucleotides. We also show that the sequencing platform works with a variety of DNA polymerases and can sequence difficult templates such as homopolymers.

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PubPeer.com comments do not end there...clearly, the impact of a retraction can overshadow past and future work.

Peer 1: (June 3rd, 2015 12:49pm UTC) There has been a retraction and Nature Nanotechnology have a nice editorial about post-publication peer review
<http://www.nature.com/nnano/journal/v10/n6/full/nnano.2015.128.html> Maybe they should reexamine a few other papers. by the same group
<https://pubpeer.com/publications/8B08B81D5C72CFF8402E4583EFA5E8> Also rather controversial
<https://pubpeer.com/publications/23103935>

Verbatim comments from PubPeer.com

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In summary...

Most comments on PubPeer.com are anonymous. Those commenting are identified as “Peer 1”, “Peer 2”, etc. unless they choose to identify themselves.

As on most social media, not all comments are constructive and thoughtful. However, many comments reflect a careful review of the paper and represent a depth of knowledge. Discussions on PubPeer have been cited as contributing to multiple article retractions.
(retractionwatch.com/?s=PubPeer, searched 06/12/15)

You can subscribe to Retraction Watch and receive email notifications of new blog posts.

Emerging Role of Social Media in Monitoring Scholarship

- PubPeer.com
- retractionwatch.com

You may wish to familiarize yourself with these discussion forums.



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For questions:

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

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