

# Research integrity: Authorship – Rewards and Responsibilities

Conference on Research Integrity  
Helsinki, November 25, 2015

Sabine Kleinert  
Senior Executive Editor, *The Lancet*  
Steering Committee for World Research Integrity  
Conferences

- Why am I an author?
- Different types of authors and how to indicate this
- Inappropriate authors and non-authors
- Responsibility of authorship: do authors realise what this means?
- Rewards of research/authorship – do we have this right?

ment: the jaundice diminished, and bile reappeared in considerable quantity in the motions. But about Nov. 12th the vomiting became more urgent, and the prostration increased. On Nov. 19th the left foot was found to be much swollen, and livid lines marking the course of the lymphatics passed up the legs. On Nov. 20th, an abscess was opened above the left ankle, from which fetid pus and gas escaped. On the same day he was seized with a fit of convulsions, followed by coma. These fits recurred in rapid succession, so that he had nearly thirty before his death at five P.M. on Nov. 21st.

On examination of the body after death, the brain and its membranes were found to be normal, except that there was a considerable amount of fluid, which contained urea, at the base and in the lateral ventricles. The kidneys were considerably enlarged, and there was much fatty and granular deposit in the secreting cells. The liver was large, and weighed 80 oz.; its secreting cells were loaded with oil; the lobules were unusually distinct, giving a granular appearance to the organ on section. The gall-bladder contained a soft, black concretion, as large as a walnut, and many small, irregularly-shaped fragments of the same material. These were suspended in a small quantity of dark-green viscid fluid, which, on microscopic examination, was found to contain a large number of pus-corpuscles. The mucous surface of the gall-bladder had a stretched, white appearance, and at the fundus was deeply injected, granular, and excoriated. The bile-ducts contained a similar viscid fluid to that in the gall-bladder, with minute particles of black inspissated bile. This could be squeezed into the duodenum without much difficulty. The mucous membrane of the stomach and duodenum was minutely injected with numerous small ecchymoses, and the surface was coated with much viscid mucus. There was great œdema and congestion of both lungs. Fat was deposited in large quantity throughout the body, and all the soft tissues were deeply jaundiced.

The examination made it clear that the fatal result was due to uræmia, while it also showed that the hepatic symptoms were probably the result of catarrh of the gall-bladder and bile-ducts, excited by the gall-stones, but which was subsiding before death.

In the case from which this preparation was obtained, there was painful enlargement of the gall-bladder and jaundice,

enlarged, the bladder inflamed, and the kidneys were granular, with dilatation of the pelvis and calices.

The contraction of the liver in this case was, no doubt, due to the long duration of the obstruction, the hepatic tissue having become atrophied from the pressure of the permanently distended bile-ducts.

## ON THE ANTISEPTIC PRINCIPLE IN THE PRACTICE OF SURGERY.\*

By JOSEPH LISTER, Esq., F.R.S.,  
PROFESSOR OF SURGERY IN THE UNIVERSITY OF GLASGOW.

IN the course of an extended investigation into the nature of inflammation, and the healthy and morbid conditions of the blood in relation to it, I arrived, several years ago, at the conclusion that the essential cause of suppuration in wounds is decomposition, brought about by the influence of the atmosphere upon blood or serum retained within them, and, in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury.

To prevent the occurrence of suppuration, with all its attendant risks, was an object manifestly desirable; but till lately apparently unattainable, since it seemed hopeless to attempt to exclude the oxygen, which was universally regarded as the agent by which putrefaction was effected. But when it had been shown by the researches of Pasteur that the septic property of the atmosphere depended, not on the oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles.

Upon this principle I have based a practice of which I will now attempt to give a short account.

# Authorship inflation

ARTICLES

## Articles

### Whole genome sequencing of meticillin-resistant *Staphylococcus aureus*

Makoto Kuroda, Toshiko Ohta, Ikuo Uchiyama, Tadashi Baba, Harumi Yuzawa, Ichizo Kobayashi, Longzhu Cui, Akio Oguchi, Ken-ichi Aoki, Yoshimi Nagai, JianQi Lian, Teruyo Ito, Mutsumi Kanamori, Hiroyuki Matsumaru, Atsushi Maruyama, Hiroyuki Murakami, Akira Hosoyama, Yoko Mizutani-Ui, Noriko K Takahashi, Toshihiko Sawano, Ryu-ichi Inoue, Chikara Kaito, Kazuhisa Sekimizu, Hideki Hirakawa, Satoru Kuhara, Susumu Goto, Junko Yabuzaki, Minoru Kanehisa, Atsushi Yamashita, Kenshiro Oshima, Keiko Furuya, Chie Yoshino, Tadayoshi Shiba, Masahira Hattori, Naotake Ogasawara, Hideo Hayashi, Keiichi Hiramatsu

#### Contributors

All investigators contributed to the design of the study and to the writing of the paper. Keiichi Hiramatsu was responsible for experimental design and interpretation of data in both N315 and Mu50 genome projects, and analysed genome complexity. Makoto Kuroda constructed the genomic libraries, and annotated the N315 genome. Toshiko Ohta, Hideo Hayashi, and Naotake Ogasawara designed the experiments on the Mu50 genome project. Ikuo Uchiyama did analyses of codon usage, GC3, and BLAST best hits. Tadashi Baba, Harumi Yuzawa, and Longzhu Cui analysed the genome for pathogenic factors, intermediary metabolism, and repetitive sequences, respectively. Akio Oguchi, Yoshimi Nagai, and Akira Hosoyama did shotgun sequencing of the N315 genome. Ken-ichi Aoki, and Toshihiko Sawano did the BLAST search analysis and illustrations in collaboration with Makoto Kuroda and Keiichi Hiramatsu. Ichizo Kobayashi, Yoko Mizutani-Ui,

and Noriko Kobayashi did the analyses of lateral gene transfer, restriction-modification system, and putative phase variation of the MHC homologue. JianQi Lian analysed N315 and Mu50 genome sequences, and confirmed the difference between the genomes with PCR sequencing. Teruyo Ito cloned rDNAs to determine individual rDNA sequences. Mutsumi Kanamori and Hiroyuki Matsumaru did PCR sequence verification and construction of the physical map of the Mu50 genome. Atsushi Maruyama and Hiroyuki Murakami annotated the Mu50 genome. Susumu Goto and Minoru Kanehisa annotated the N315 genome and reconstituted the metabolic map. Junko Yabuzaki worked on the identification and classification of transporters and two component regulatory system. Ryu-ichi Inoue, Chikara Kaito, and Kazuhisa Sekimizu analysed the lipid and carotenoid synthetic pathway, cell-wall synthetic pathway, and DNA replication system, respectively. Hideki Hirakawa and Satoru Kuhara did sequence compilation and assembled the sequence of Mu50. Atsushi Yamashita, Kenshiro Oshima, Keiko Furuya, Chie Yoshino, Tadayoshi Shiba, and Masahira Hattori determined the Mu50 genome sequence.

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# ICJME definition - who is an author? THE LANCET

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.
- 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.
  - All those designated as authors should meet all four criteria for authorship, and all who meet the four criteria should be identified as authors. Those who do not meet all four criteria should be acknowledged

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#### Contributors

ASm, SY, MO'D, and MM developed this research question and designed these analyses, and ASm had primary responsibility for the writing of this report. SY conceived and initiated the Prospective Urban Rural Epidemiology (PURE) study, supervised its conduct and data analysis. KKT was the co-principal investigator of the study. SR coordinated the worldwide study. ASm and XZ completed all data analyses. PR, DPL, GD, PS, AR, AES, PL-J, AO, JC, RD, SL, AA, RK, VM, ASz, LW, WY, and BJ were involved in the coordination of the PURE study at the project office or in the included countries and provided comments during the writing and editing of the manuscript.

#### Declaration of interests

We declare no competing interests.

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**Who takes responsibility for what?  
Everyone is accountable!**



- Why am I an author?
- Different types of authors and how to indicate this
- **Inappropriate authors and non-authors**
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# Inappropriate authorship or non-authorship

## The three G's

- **Guests (invites him/herself)**
- **Gifts (authorship as a present – ie department head... But they might not know!)**
- **Ghosts (or the disappearing author.....)**



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# Seven areas of author 'sins'

- Research that is needed
- Planning: protocol, statistical plan, ethics/consent, authorship and responsibilities (**decide early!**)
- Actual authorship = contribution = accountability
- Full + honest reporting
- publish!
- Declaration of interest
- Responsibility after publication





# Too much of a good thing? An observational study of prolific authors

Elizabeth Wager<sup>1</sup>, Sanjay Singhvi<sup>2</sup> and Sabine Kleinert<sup>3</sup>

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## ABSTRACT

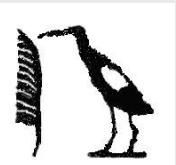
**Introduction.** Researchers' productivity is usually measured in terms of their publication output. A minimum number of publications is required for some medical qualifications and professional appointments. However, authoring an unfeasibly large number of publications might indicate disregard of authorship criteria or even fraud. We therefore examined publication patterns of highly prolific authors in 4 medical specialties.

**Methods.** We analysed Medline publications from 2008–12 using bespoke software to disambiguate individual authors focusing on 4 discrete topics (to further reduce the risk of combining publications from authors with the same name and affiliation).



# Extreme productivity

- Max. number of publications **per year**:
  - 43 (all types of publication)
  - 15 (trials)
- Of the 10 most prolific authors for each topic
  - 24/40 listed on  $\geq 1$  publication/10 working days in any single year



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- (false) Incentives
- Career progression
- Further funding, individually and institution-wide (research assessment exercises)
- Quantity over quality
- Easy (lazy) proxy for Quality
- Individual versus team science
- Short-term versus long-term output

# How journals like Nature, Cell and Science are damaging science

## Randy Schekman

The incentives offered by top journals distort science, just as big bonuses distort banking

**Research environment/  
Reward system**

**Research Integrity**

**Research productivity/waste**



# THE LANCET

Research: increasing value, reducing waste - January, 2014

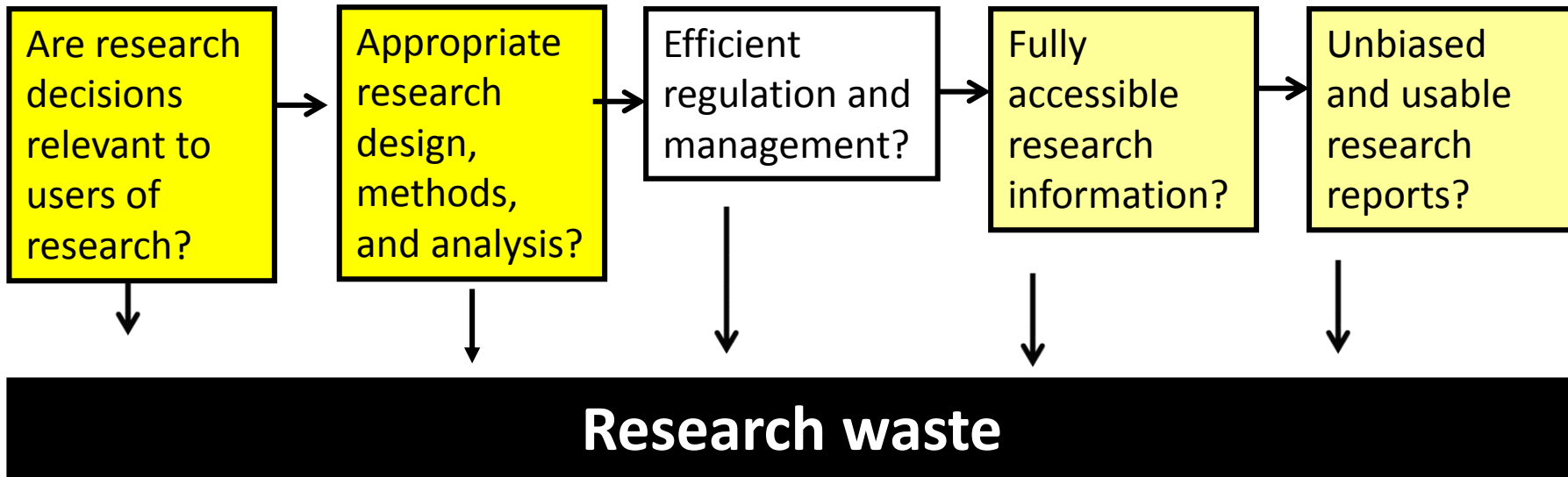
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**Talking about it**

Research: increasing value, reducing waste

# Avoidable waste or inefficiency in biomedical research





### ***Panel: Research in context***

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This section should include a description of all the evidence that the authors considered before undertaking this study. Authors should state: the sources (databases, journal or book reference lists, etc) searched; the criteria used to include or exclude studies (including the exact start and end dates of the search), which should not be limited to English language publications; the search terms used; the quality (risk of bias) of that evidence; and the pooled estimate derived from meta-analysis of the evidence, if appropriate.

#### **Added value of this study**

Authors should describe here how their findings add value to the existing evidence (including an updated meta-analysis, if appropriate).

#### **Implications of all the available evidence**

Authors should state the implications for practice or policy and future research of their study combined with existing evidence.



The *Lancet* REWARD (**RE**duce research **W**aste **A**nd **R**eward **D**iligence) Campaign invites everyone involved in biomedical research to critically examine the way they work to reduce waste and maximise efficiency.

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We recognise that, while we strive for excellence in research, there is much that needs to be done to reduce waste and increase the value of our contributions. We maximise our research potential when:

we set the right research priorities;  
we use robust research design, conduct and analysis;  
regulation and management are proportionate to risks;  
all information on research methods and findings are accessible;  
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We believe we have a responsibility not just to seek to advance knowledge, but also to advance the practice of research itself. This will contribute to improvement in the health and lives of all peoples, everywhere. As funders, regulators, commercial organisations, publishers, editors, researchers, research users and others – we commit to playing our part in increasing value and reducing waste in research.”

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#### Updates

The first REWARD conference, held jointly with EQUATOR Network, in Edinburgh 28-30 September 2015, was an unmitigated success! Full details of the [programme and abstracts are available](#); the PowerPoint slide presentations and video content will be posted online soon. There were 236 delegates from 28 countries.

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