

## Scientific Misconduct and *Lipids*: A View from an Editor-in-Chief

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Acts of scientific misconduct are preponderantly found in peer-reviewed journals, yet what is the role of the Editor-in-Chief in detecting and dealing with these acts? This is an important question, as often times this role may appear to be poorly defined. While a role in detecting scientific misconduct is important, what about our role in detecting and dealing with issues that, while not meeting the defined metric of scientific misconduct, are indeed types of behavior that are less than desirable?

While defining acts of fabrication, of falsification, and of plagiarism (FFP) is seemingly simple, detecting these acts of scientific misconduct is often much more difficult. Forensics software has advanced enough to now compare homology between a submitted manuscript and the published literature, but how good are the results? Are these results the end all of an investigation or on the contrary just the beginning? While forensics software is indeed useful in detecting homology, it requires verification by the Editor-in-Chief that the suspected manuscript does contain material that is plagiarized from the identified papers in the literature. This point is well demonstrated after having examined some papers from *Lipids* on the *Déjà vu* website. Although these abstracts had a high degree of homology with those of other abstracts from the same group also published in *Lipids*, I was amazed that these abstracts were not even reporting results from the same experiments. Hence, merely basing a decision upon the results of forensics software would be irresponsible on my part. I find in the end, that plagiarism is detected by the peer-review process and confirmed by a line-by-line comparison by me

with the suspected literature from which an author may have plagiarized.

Similarly, finding fabrication of and falsification of results is equally problematic. When are data manipulated (falsified) in a Western blot? Where does the line between enhancing the quality of the figure and manipulating the blot begin and end? While these acts are difficult to define, it is relatively easy to detect bands from Western blots that are copied onto figures from other blots in a manuscript. Blots that are too clean suggest perhaps manipulation of the background, which might eliminate certain bands. Fabrication of data is similarly difficult to detect. When does an author merely “make up” the data presented in a manuscript? All in all, these acts are neither simple nor easy to detect and like plagiarism, when detected the process by which each case is handled is indeed important.

It is absolutely critical during the process of my investigation to protect all parties involved in the putative misconduct as individuals’ reputations and careers are at stake. Having dealt with a number of these cases over the years, the approach used in each case is indeed unique, but the overall process is similar in all cases. For the traditional FFP, my approach includes a careful investigation of the materials involved, notification and discussion by phone with the involved parties, and following careful consideration of all the evidence, rendering a decision and notification of the decision to the senior author. Where appropriate, the evidence is presented to institutional officials, e.g., compliance officials. It is the responsibility of compliance officials to conduct their own investigation and to report the on-going investigation as well as its outcome to the proper authorities as defined by the funding source. After presentation of evidence to the appropriate parties, my role in the process is done until an inquiry is made by compliance officials that may require my input.

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However, while FFP is the misconduct of interest for the Office of Research Integrity (part of the U.S. Health and Human Services or HHS), many other forms of misconduct exist that do not meet the definition of FFP. Are these acts of misconduct an entry act to a more serious form of misconduct? Or are these common acts perpetrated by such a great number of individuals in the scientific community that these acts should merely be ignored? These acts include, but are not limited to, authorship issues, poor use of statistical analysis, improper elimination of “errant” results, inappropriate use of animals or humans in research, failure to cite relevant literature, misleading titles, and inappropriate or limited interpretation of results. These acts are indeed a bit more of a gray area, but in my opinion detecting and dealing with these acts is of equal importance.

Why? Because many of these issues again are sometimes difficult to detect, but ignoring these acts does not form an effective deterrent to committing similar acts in the future. In addition, the lack of author education with regard to these more minor offenses and accepting these issues as permissible, may lead to an ever-escalating level of offense in the future by some authors. In the end, I have a crucial role in detecting and dealing with all levels of scientific misconduct and must be prepared to do so with a

high level of rigor and integrity. Merely permitting authors to have a liberal inclusion of authors that do not meet the accepted criteria for authorship is permitting a dilution of the importance of being an author in a scholarly publication. Permitting an abstract to portray inaccurately the outcomes of the experiments presented in a manuscript may alter the downstream citation and interpretation of the paper by the scientific community. Similarly, the permitted use of improper statistics to analyze results, which unfortunately is seen in many published papers, may actually alter the interpretation of the outcomes and thereby help to form dogma in a field. While this per se is not falsification or fabrication of data, clearly the outcome may be exactly the same, a false sense of security in the accuracy of the reported results and the interpretation of the outcomes.

As such, at *Lipids*, all acts of scientific misconduct, both minor acts as well as FFP, are taken quite seriously. I do believe that author education is of paramount importance in preventing the commission of minor acts of misconduct by authors and to present the progression to perhaps a much more serious and career-ending act of scientific misconduct. As an Editor-in-Chief, I must take an active role not only in detecting and dealing with these acts, but also with educating authors in an attempt to minimize their occurrence.