

COLUMN

How to survive as a whistle-blower

Scientists who report potential misconduct must tread carefully, says **Michael Doran**.

In 2012, a graduate student came to me for advice. His supervisor was travelling, and the student needed images for a review article that he was writing. I suggested that he check his lab's shared folders for something suitable. When he came to me again, he was shaking.

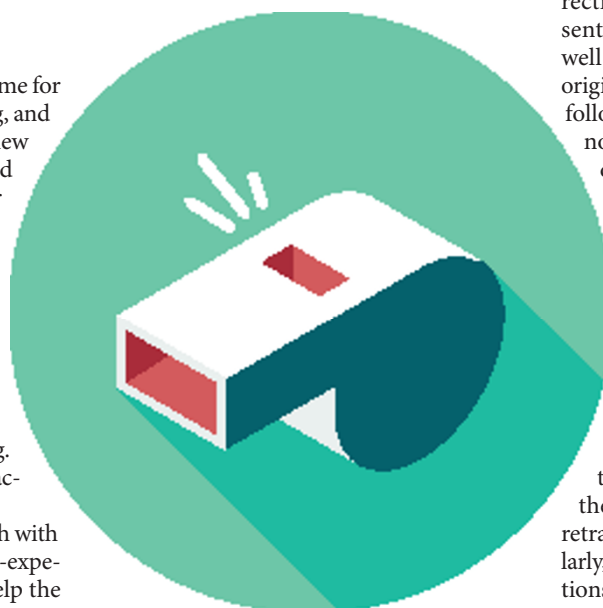
The student had found images and data that he was very familiar with, but that bore unfamiliar descriptions. He was concerned that findings that he had been unable to replicate from a previous publication, and which were the foundation of his PhD project, were misleading. He wanted me, a junior member of the faculty, to tell him what to do next.

I spent hours looking at the data, both with him and on my own. I consulted a more-experienced colleague, and I decided to help the student to submit a complaint.

Ultimately, I advised that he take his concerns to the vice-chancellor. Although we did not know it at the time, doing so mandated that the complaint be formally investigated. It also gave the student some protection from the possible repercussions of being a whistle-blower.

Internal investigations followed, as well as a retraction, repayment of a major national grant and an external inquiry that found research misconduct and multiple misrepresentations by one researcher (who was not the travelling supervisor referred to above), but no intentional wrongdoing. (Some other allegations made to the external panel were not upheld.) The vice-chancellor violated state policy by disclosing my name to a reporter. Although he self-reported the breach, I wondered what else was being said about me and to whom. The difficult situation was new to us all. It affected my health, productivity and relationships; I lost countless hours that I could have devoted to lab work. The student, who has still not graduated, is taking a break from research.

There is no handbook that describes what to do in these situations. If you decide to be a whistle-blower, you must realize that it will be stressful. And because it is so stressful, you want to ensure that any investigations that are carried out will be robust. Every case needs to be considered on an individual basis, but I hope that



sharing my recommendations will help others who find themselves in a similar position.

Don't confront potential misconduct alone.

Although postdocs and PhD students are the most likely to identify inconsistencies in the previously published data of their groups, they are often the least equipped to highlight serious problems. Be ready to give your supervisor the benefit of the doubt, but also be aware that raising concerns directly could provide an opportunity to obscure evidence of misconduct. In fact, the co-founders of the blog Retraction Watch recommend against contacting authors first if no one else knows of issues in the research.

Before submitting a complaint, ask a technical expert (preferably from outside your university) to corroborate your assessment. In my case, I asked others to verify my evaluation of data without disclosing exactly why. You must be absolutely confident of the veracity of your complaint and be ready for your expertise to be called into question.

Make your case clearly and keep detailed records. Describe inconsistencies thoroughly, and ensure that any correspondence is recorded electronically; complaints with a digital trail are less likely to disappear. Maintain careful records, and retain all of the original data, if possible.

Do not relinquish these records, and neither deny nor admit that you have them. Doing so could mean that authorities might either dismiss your assertions or accuse you of holding unauthorized copies of data.

Submit your complaint to the highest authority. A stifled complaint will degrade your credibility. Take steps to maximize the chance that your concerns will be investigated and that you will be protected from retribution. In our case, an initial internal inquiry did not result in what we felt were the necessary corrective actions. Frustrated, the student then sent his complaint to Retraction Watch, as well as to the journal that had published the original paper. In the retraction statement that followed, the journal editor said that he did not think that peer reviewers would have deemed the paper acceptable had they known the "extent and nature of the mistakes" that it contained. A similar scenario occurred with the grant.

In retrospect, I would recommend that you submit complaints directly to journals and funding agencies. Although journals cannot conduct investigations themselves, they can demand further information and data from authors. They are also best equipped to evaluate the significance of errors within their publications and have the power to retract papers when flaws are revealed. Similarly, funding agencies can instruct the institutions that they support to conduct a rigorous review. Even though members of your university are likely to learn or guess who submitted the complaint, the involvement of external organizations creates a buffer between you and the institution.

Avoid public disclosure. In my view, it is not appropriate to make public statements about such cases until they are resolved. It would have been much easier for me if our case had not been discussed openly until its outcome had been decided. However, I think the student found that talking to the press helped to gain traction within the university.

Despite the stress it caused and the time it required, I would still urge other scientists to help bring misconduct to light if they uncover it. As more cases emerge, it becomes easier for other whistle-blowers to come forward: this incident prompted the university to implement progressive policies concerning responsible research practices. Supporting scientists and protecting scientific integrity are part of our obligations as academics. Misconduct hurts science and wastes taxpayers' money. Remember — you are doing the right thing. ■

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CLARIFICATION

The general advisory nature of the Careers article 'How to survive as a whistle-blower' (*Nature* **532**, 405; 2016) meant that it purposely did not discuss the case used as an example in detail. For clarity, it should be noted that as a result of the university's initial internal inquiry into the case, the co-authors were recommended to submit a list of errors to the journal in question. The editor-in-chief of the journal ultimately elected to retract the paper. In addition, a subsequent external inquiry concluded that although there had been misconduct by one researcher, there was no misconduct by the travelling supervisor referred to in the article, and there was no intentional wrongdoing. It also found that some of the allegations were not substantiated.