

misconduct, and that 54% of RIOs had never called ORI to report misconduct. Wright says that cultures vary greatly by campus, which is one reason why the ORI boot camp, launched in 2007, offers ongoing formal training to RIOs. Still, there is some indication that if whistleblowers are dissatisfied with their institution's response, they may have to contact the ORI themselves. "When the ORI receives allegations that are substantial, we request that the institution move immediately to an inquiry," says John Dahlberg, director of the division of investigative oversight at the ORI. UK universities may also have designated RIOs, if funders adhere to calls made in February, following a research misconduct meeting organized by the *British Medical Journal* and the Committee on Publication Ethics.

Specificity is a key component of any evidence used to substantiate an allegation, says Dahlberg. Resnik says "anytime you go forward, you need documentation to back up what you say so the allegations are not tossed out." Whistleblowers should never file a formal complaint on the basis of a rumour or information gained from a third party, says Gerald Koocher, associate provost at Simmons College in Boston, Massachusetts. "If you don't have a smoking gun, at least have a gun," he says. Ideally, whistleblowers will be able to describe the nature and whereabouts of any additional evidence that may support the allegation, says Wright.

Once allegations are made, there is a danger that data sets could become adulterated or vanish, says Barnes. The ORI requires institutions that have received credible allegations to seize the computer, e-mails or data that may be used as evidence, to prevent this happening.

However, tipping off the perpetrator is a valid concern in a lab where people work closely together. Colleagues are likely to discuss their suspicions before making a formal allegation, creating an opportunity for the perpetrator to tamper with evidence. If researchers really believe there may be misconduct, they should either make a copy of the raw data before suspicions are aired or go straight to the authorities with their suspicions, says Barnes. The worst thing complainants can do is convince themselves that they are the prosecutor who needs to build a case against the suspect, says Wright. Complainants are wise to simply give any evidence to an impartial investigator; otherwise, their motives could be called into question.

INVESTIGATION UNFOLDS

If an allegation is deemed to have merit, a university committee starts an inquiry to review the evidence supporting the allegation and to decide whether a formal investigation is necessary. Inquiries found to have sufficient evidence will often then lead to the formation of a new committee to undertake the investigation.

In Wright's experience, at a research-intensive institution it is not uncommon to have ten significant allegations made in a year. Of those, only about six will go to an inquiry; two may evolve into investigations, and only one or none at all will result in findings of misconduct.

Complainants should also realize that investigations can go on for a year or more. During an investigation, Barnes suggests carrying on as normal. For example, during the Hauser investigation, a former colleague says that although senior members of the lab were aware of the investigation, it was hardly ever discussed. But Koocher adds that complainants are wise to document everything they witness during the course of the investigation.

PREVENTING FRAUD

High-profile misconduct cases such as those of Hauser and Potti mean that data undergo increasing scrutiny by university administrators. In the wake of the Potti case, Duke University is planning a 'data lockbox', essentially an electronic means to track who has handled data and files, and the changes they have made. The university also plans to embed biostatisticians within clinical research groups to help prevent against inadvertent errors in data analysis.

"Part of the problem with complex data sets inherent to today's science is that you can't pick them up and know instantly that something is fishy," says Sally Kornbluth, vice dean for basic sciences at Duke's School of Medicine. Resnik notes, for example, that genome-wide association studies have been controversial because of the evolving statistical methods that people are using. Baggerly advocates more open sharing of data-analysis methods. "The main things that we were stymied by was simply trying to get the raw data and the code used to perform Potti's analyses," he says.

Being vigilant in cases of apparent fraud or misconduct not only corrects the record, but saves others from wasting time, effort and money. For graduate students or postdocs, deciding whether to publicly question the practices of their colleagues can be tough. But Koocher reminds junior scientists that they are often the first to take the fall if something fails or proves unreliable in the lab. "In cases where misconduct is suspected, it's way better, and smarter, to take action that is self-protective," he says, "rather than risk getting any of the blame." ■

Virginia Gewin is a freelance writer based in Portland, Oregon.

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ACADEMIA

Women miss out

Female academics across all fields are less likely than their male colleagues to receive bonuses, according to a study of employees at a large, unnamed Canadian university (C. Doucet *et al. Ind. Relat.* **67**, 51–75; 2012). The discrepancy may be because female faculty members have fewer networking connections and less knowledge about bonuses than men, suggests Christine Doucet, a sociologist at the University of Montreal, Canada, and co-author of the article, which used data on some 1,900 faculty members. Those who lack institutional networks should seek out information about informal benefits, she advises. If universities followed more formal compensation practices, rather than relying on informal discretion, equity would improve, she notes.

PROFESSIONAL DEVELOPMENT

Career-path support

US universities, federal policy-makers and employers must coordinate their efforts to improve the career paths of postgraduates, according to a report by the US Council of Graduate Schools in Washington DC and the Educational Testing Service in Princeton, New Jersey. *Pathways Through Graduate School and Into Careers* calls for universities to offer professional-skills development training, information on non-academic careers and tracking of career outcomes. More employers need to offer student-training programmes such as internships, help to foster graduate programmes tailored to workforce needs and support employees' graduate study. The report also calls for US visa policies that help to retain international talent.

PHARMACEUTICAL INDUSTRY

UK placements down

Training for academics by UK drugmakers declined from 2007 to 2011, finds a survey by the London-based Association of the British Pharmaceutical Industry. The number of research-training placements fell owing, in part, to outsourcing and site closures. The number of industry postdoc positions dropped by more than 12%, and posts for undergraduates decreased by half. But support for PhD students is up because companies are moving towards funding for four years, rather than three, to offer broader training. Association spokeswoman Louise Leong notes that industry training schemes help to tailor the workforce, which facilitates job placement.