

FRAUD AND MISCONDUCT IN BIOMEDICAL RESEARCH

Fourth Edition

Edited by

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15 Handling whistleblowers: Bane and boon

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Drummond Rennie

Introduction

The US Commission on Research Integrity¹ held 15 public meetings all over the USA, and heard testimony from many scores of witnesses: researchers, accused scientists, whistleblowers, administrators, politicians, patients, and members of the general public. On one particular morning, we heard a series of young female scientists. Each had blown the whistle on a colleague whom she suspected of research misconduct. Each had stuck to her guns through a long-drawn-out and bitter process. Each had endured ostracism and retaliation. For each, the event had effectively ended her career as a scientist. Yet each was entirely vindicated by formal investigation.

In this chapter, we examine why such a sorry state of affairs should result when such people, the whistleblowers, should be one of our most valued resources, and we suggest ways to put things right.

What are whistleblowers and why should anyone care?

Whistleblowers: a definition

A whistleblower is a person who calls attention to wrongdoing, usually from within an organization. The term is broad, covering everyone from the one-time anonymous caller all the way to one who pursues charges doggedly over a number of years and across jurisdictions. Whistleblowers may be correct or mistaken; our usage here is of the broadest sort, meant to encompass all those from a person first raising charges to one whose charges have been validated. The Glazers, in their classic book *The Whistleblowers: Exposing Corruption in Government and Industry*, define whistleblowers as 'employees who publicly disclose unethical or illegal practices in the workplace'.² Whistleblowers serve as an irreplaceable quality-control mechanism, and history shows that we ignore them at our peril, as the vast proportion of cases of scientific misconduct are revealed only by the courageous action of whistleblowers, often taken at great personal cost. Science often operates at an intimate level. A colleague can, as happened in the notorious Darsee case (described by Kohn,³ p. 85), see a scientist put several different dates on an electrocardiograph strip as it runs during a short experiment on a dog's heart. No one

outside the laboratory could ever have detected that the falsification had taken place. So insiders are the only ones who can report many problems, being on the spot with access to necessary information. In this respect, their actions make them – or should make them – an invaluable boon to their employers and society.

The reality is more complicated. Even vindicated whistleblowers have found their careers seriously damaged, if not irreparably destroyed: instead of being honoured, they are frequently seen as the bane of their employing organizations. This boon-bane paradox is understandable once a few important characteristics of workplaces, whistleblowers, and human nature are explored.

Challenges in discovering and responding to wrongdoing

One of the most difficult problems in any organization is how to discover and respond to wrongdoing and allegations of wrongdoing. In any setting, people misunderstand each other, work at cross-purposes, and disagree about how to achieve mutual objectives. Where people work together, there will inevitably be some quantity of conflict, disagreement, and even wrongdoing. This reality is already complex and challenging before adding the layers of complexity that accrue when the differences or misunderstandings involve reports of transgressions.

Handling whistleblowers should be understood as a larger matter than simply responding when a report of misconduct arises. An effective response to whistleblowing requires fundamentally good habits of management, sensible internal checks and balances, and effective systems for determining facts when problems arise. It requires understanding that, although problems that surface through official processes (internal investigations or audits, etc.) present their own challenges, those processes are part of the administrative structure of the university. As such, their findings seem easier for organizations to deal with effectively than those stemming from unsolicited reports of misconduct lodged by insiders who come forward voluntarily, in a self-appointed way, and who may be far from dispassionate about the charges.

Finally – and most difficult for those who wish to ensure the integrity of work done in their environments – responding effectively and accurately to whistleblowers means constructing systems that take into account the reality that reports of problems rarely surface placidly, and may be presented by someone who is stressed, emotional, unpleasant, unreasonable, or angry – and still correct about a matter that goes to the heart of the work done by the organization. Moreover, the circumstances of complaining about a colleague's behaviour are so fraught, so dangerous, and so often complicated by personal ties that even reasonable individuals may seem unreasonable or unbalanced. While large-scale clinical trials of drugs in patients require audit, this is exceedingly expensive, and the scientific enterprise would grind to a halt if forced to submit to such daily scrutiny.⁴ So the facts remain that only co-workers are in a position to observe and report research misconduct and that it is very costly in personal terms.

'Good-faith' whistleblowing

Our discussion will focus on the problems surrounding responses to good-faith whistleblowing, or reports that are made in reasonable belief that the complaint is true. Most

definitions of 'good faith' require that the person reporting the misconduct must do so with reasonable care and with the belief that the charges are true (Box 15.1). Where an allegation is filed maliciously – in the knowledge that the allegation is false, or in reckless disregard for its truth or falsity – different considerations come into play. Although there is often a period of time in which the central truths are not known, the steps for responding to an allegation are fundamentally the same through the completion of the fact-finding, so the original processes should all be the same. The only time

BOX 15.1 Whistleblowing definitions

Whistleblowing

The Glazers, in their classic book *The Whistleblowers: Exposing Corruption in Government and Industry*, define whistleblowers as 'employees who publicly disclose unethical or illegal practices in the workplace'. They reference the six-part requirement for justifiable acts of whistleblowing developed by Norman Bowie, a writer on business ethics:²

'(1) that the act of whistleblowing stem from appropriate moral motives of preventing unnecessary harm to others; (2) that the whistleblower use all available internal procedures for rectifying the problematic behavior before public disclosure, although special circumstances may preclude this; (3) that the whistleblower have "evidence that would persuade a reasonable person"; (4) that the whistleblower perceive serious danger that can result from the violation; (5) that the whistleblower act in accordance with his or her responsibilities for "avoiding and/or exposing moral violations"; (6) that the whistleblower's action have some reasonable chance of success.'

Whistleblowing

According to the *Oxford English Dictionary*, whistleblowing is:³⁰

'(d) to blow the whistle on (a person or thing): to bring an activity to a sharp conclusion, as if by the blast of a whistle; now usu. by informing on (a person) or exposing (an irregularity or crime).
'whistle-blower chiefly U.S., one who "blows the whistle" on a person or activity (Used in this sense for the first time by PG Wodehouse, 1934, in "Right Ho, Jeeves.");'

Good-faith whistleblowing

According to the US Office of Research Integrity:²⁴

'"Good faith allegation" means an allegation of scientific misconduct made with a belief in the truth of the allegation which a reasonable person in the whistleblower's position could hold based upon the facts. An allegation is not in good faith if made with reckless disregard for or willful ignorance of facts that would disprove the allegation.'

BOX 15.1 (continued)

Good-faith allegation

According to the UK Medical Research Council:³¹

'Good faith allegation means an allegation of scientific misconduct made by a complainant who honestly believes that scientific misconduct may have occurred. A complainant who recklessly disregards evidence that disproves an allegation has not made the allegation in good faith.'

Abuse of privilege

According to the Office of Research Integrity:²⁸

'Although an allegation of scientific misconduct might otherwise be privileged, the whistleblower may be liable for defamation if he abuses the privilege. Abuse of the privilege may occur in several ways:

- the whistleblower knows that the defamatory matter is false (or he has reckless disregard for the truth);
- the defamatory matter is disclosed for some purpose other than that for which the privilege is given;
- the disclosure is made to a person not reasonably believed to be necessary for accomplishment of the privilege's purpose; or
- the allegation includes defamatory matter not reasonably believed to be necessary to accomplish the privilege's purpose.

'These various abuses may be described collectively as "bad faith" or "malice".'

'ORI believes that an allegation which is not made in good faith or which violates the confidentiality of the accused should not be protected. For example, a whistleblower might abuse the privilege by making an allegation he knows to be false or by disclosing misconduct to unauthorized persons such as the media. Such bad faith disclosures constitute abuse of the conditional privilege and would not be protected against defamation actions.'

'Though bad faith whistleblowers may forfeit the conditional privilege, case law clearly instructs that the conditional privilege carries with it a presumption of good faith. In other words, the burden of showing bad faith falls on the plaintiff who brings suit for defamation.'

'Good faith whistleblowers are not obliged to (nor should) conduct exhaustive investigations before bringing serious problems to attention; examples of bad faith: hearing gossip from an unreliable source known to hate the person about whom the report is made and rushing off to file an anonymous written complaint.'

at which the handling of a malicious whistleblower differs is *after* the determination of falsity of the charges and disposition of the matter.

However, being wrong about charges does not necessarily make them maliciously motivated: as will be seen, many – perhaps most – charges are mistaken. Thus, being proven wrong is a necessary, but not sufficient, component of being found to be a

malicious whistleblower. To be found to be malicious, a charge must have been known to be without merit, or have been brought with utter carelessness for its accuracy.

Even if meanly motivated, a verified charge is not a malicious charge. To make the situation even more complicated, if a set of charges is verified as true, the motives of the whistleblower, however mean-spirited or spiteful, are by definition not malicious charges. Allegations brought by a whistleblower that are substantiated cannot be viewed as malicious however much antipathy the whistleblower might have felt for the wrongdoer or however happy the outcome makes the whistleblower. The importance of this distinction becomes clear when exploring how frequently allegations are rooted in conflict or discord within a workplace.

The whistleblower

Whistleblowers are difficult and can appear 'flaky'. It is not only the complex personal relationships and organizational setting surrounding allegations of scientific misconduct that make evaluation of the good faith of whistleblowers difficult: the actions of the whistleblowers themselves often muddy the waters.

First, whistleblowing is nerve-racking for a variety of reasons – not least because complainants as a class provoke uncomfortable emotions. As a rule, people in organizations dislike and are wary of those who present evidence of problems that cause complications and headaches for administrators and can make others look bad. Indeed, across cultures, we did not like children who carried tales, and we do not like people who do the same as adults. Daily life inside the organization can quickly become difficult and uncomfortable for a whistleblower. Whistleblowers routinely report feelings of anxiety,

BOX 15.2 **Effects of whistleblowing**

Studies on whistleblowers reveal time and again that whistleblowing is a perilous activity. A representative comment is: 'Not only do most whistleblowers get fired, but they rarely get their jobs back. Most never work in the field again ... of the several dozen whistleblowers I have talked with, most lost their houses. Many lost their families. It doesn't happen all at once, but whistleblowers' cases drag on for years, putting a tremendous strain on families. Most whistleblowers will suffer from depression and alcoholism' (Alford,⁵ p. 19).

Excerpts from *Consequences of Whistleblowing for the Whistleblower in Misconduct in Science Cases*³³

'Another study published in the same year (U.S. Merit Systems Protection Board, 1993), although focused on a much broader range of misconduct by government employees than just scientific misconduct, went well beyond perceptions of the propensity to report and feelings of vulnerability. It collected information from over 13,000 government employees to examine the extent of exposure to misconduct, the extent to which those exposed reported the misconduct, the reasons why some did not report, and what happened to those who did. Key findings from this study included the following:

BOX 15.2 (continued)

- Eighteen percent of those surveyed reported personal awareness of misconduct;
- Half of those who knew of misconduct had reported it (up from 30% in a 1983 survey);
- Of those who did not report the misconduct, 60% believed that reporting it would have no impact and 33% did not report because they feared retaliation;
- Thirty-seven percent of those who reported the misconduct reported subsequent threats or retaliation; and
- Nearly half of all those who reported threats or retaliation believed that they experienced each of the following: shunning by coworkers or managers (49%); verbal harassment or intimidation (47%); and poor performance appraisals (47%).

Other studies have focused on those who have reported retaliation (GAO, 1993). However, we know of no study that has specifically investigated whistleblowers in cases of scientific misconduct. This study is ground-breaking in that regard.'

'The survey shows that institutional officials, as a group, are involved in almost all (88%) of the cases that experienced the most serious negative outcomes, while only about a quarter of the accused (24%) and fewer colleagues (18%) and professional societies (6%) are reported to be responsible for such outcomes.'

'Case outcome. Complainants whose allegations were partially but not fully confirmed were the most likely (79%) to experience negative consequences. Those whose allegations were totally unsupported were next most likely (74%) to report adverse consequences followed by those whose allegations were fully supported (68%).'

'Not a single whistleblower reported that their whistleblowing had a positive impact on their careers.'

'More than two-thirds of all whistleblowers reported experiencing at least one negative outcome as a direct result of their whistleblowing. Conversely, nearly one-third did not experience any adverse consequences of blowing the whistle.'

- **Whistleblowers most likely to have experienced an adverse outcome** of their whistleblowing included:
 - lower ranking faculty and students/fellows in basic science departments;
 - those who alleged misconduct by their colleagues.
- **Whistleblowers least likely to have experienced an adverse outcome** of their whistleblowing included:
 - academics in clinical departments;
 - workers in non-academic settings (particularly government workers);
 - those with senior administrative positions in their institutions;
 - those who allege misconduct by individuals at a different institution.

BOX 15.2 (continued)

- **Blowing the whistle was most likely to have adverse outcomes** in situations in which:
 - fabrication of data was alleged;
 - the case received some publicity;
 - the allegations were made to a senior administrative official or misconduct official of the institution or to the funding agency;
 - the allegations were made both within and outside the institution;
 - the allegations were made to many different types of individuals;
 - the allegations were subjected to an investigation.

In general, these findings suggest that *whistleblowers are most at risk of adverse outcomes in high profile cases in the basic sciences, especially when those cases gain notoriety outside the institution and the complainant is a lower ranking faculty member or student.* Institutional officials and funding agencies appear to put the interests of their organization above those of the whistleblower. While this may well seem appropriate to such officials and agencies, because more than 70% of cases result in no findings of misconduct (according to ORI records), this pattern definitely suggests a failure in mechanisms to protect vulnerable whistleblowers from retaliation.'

'The seeds of nearly every negative action taken against a whistleblower are sown during the active phase of the investigation. Very few whistleblowers suffer adverse consequences exclusively in the period after the case is closed.'

The most serious negative consequences – loss of position, loss of research resources or opportunity, and denial of advancement – simply do not happen without substantial involvement and direction by institutional officials. Lesser negative outcomes – hassles, pressures, and delays – also frequently come from institutional officials but are equally as likely to come from the accused. These findings suggest that *for whistleblowers to suffer the most serious negative outcomes, institutional officials must play a significant role in dealing with their cases.* [emphasis in original] The accused can also cause problems for whistleblowers but generally the consequences attributed to the accused tend to be more widespread but less severe than those attributed to institutional officials.' [emphasis in original]

apprehension and vulnerability, as well as experiencing mistreatment, threats and retaliation against them for their reports (Boxes 15.2 and 15.3).

Forms of retaliation can be social, such as shunning, or more active, including verbal harassment, intimidation, poor performance appraisals, and dismissal.⁵ For example, the whistleblower in one extensively investigated and litigated case, Nancy Olivieri, suffered massive retaliation of every sort, up to and including loss of her job, until her vindication and court-ordered restoration. The acts of retaliation included anonymous hate mail to Olivieri's supporters, which was revealed, ultimately, to be from her own senior colleague and co-investigator, Gideon Koren. This came out when his DNA was

BOX 15.3 Effects on the whistleblower: the case of Eric Poehlman, 2006

A classic case of a whistleblower who suffered, despite ultimate vindication, is that of Walter DeNino. Working in the laboratory of the prominent researcher Eric Poehlman at the University of Vermont in the late 1990s, DeNino was unable to reconcile data, and called the irregularities to attention after intensive internal efforts to seek corrections. Although others in the laboratory had similar concerns, only DeNino, one of the most junior researchers, spoke up. For his troubles, he was ostracized, discredited, and threatened with lawsuits and the loss of his job. Through what *Nature* called 'an arduous and sometimes ugly investigation process', DeNino's character was smeared. Poehlman charged that the data had been fabricated by DeNino himself and that DeNino was raising questions out of homophobia and jealousy.³⁴ Ultimately, DeNino resorted to hiring his own attorney to protect his name and rights. The report of the university's panel investigating the charges against Poehlman detailed many instances that 'display Dr Poehlman's contempt not just for the truth, but for this Panel, the University, and his profession'.³⁵ And yet DeNino was described as one of the 'lucky' ones:³⁶ '[a]s a whistleblower, he was very cautious in making an allegation and he was well-protected by the policies and actions of the University of Vermont'. (Apparently, this means that he did not lose his job – instead, only being threatened with its loss.) During the six years after he first raised his concerns until Poehlman was sentenced to prison, DeNino was under a cloud while Poehlman pursued an aggressive defence. In the words of his attorney Philip Michael, 'A lot of whistle-blowers are retired. For Walter, this is something that will follow him for the rest of his life.'^{36,37}

Poehlman's case is one of the few that has been criminally prosecuted in the USA, with prison time, fines levied for fraudulent use of federal research funds, and the requirement that 10 scientific papers be retracted (an intensive effort to assess the validity of his other 200 published articles is underway).³⁷ Even though many others had private questions about Poehlman's work, none were willing to come forward until after the 24-year-old DeNino had gone to the authorities. A tenured professor working in the same laboratory space has told a reporter that his early advice to DeNino was 'first, understand that no matter how you proceed, everyone loses. Your career will be ruined because no one is going to protect you. The university will come out bad and Eric's reputation will be destroyed.' Yet this was an egregious case warranting criminal prosecution.³⁸

identified on the envelopes as part of extensive forensic analysis that Olivieri and her supporters initiated and paid for.⁶

Robert Sprague, a tenured professor who revealed the presence of fabricated data in publications affecting treatment with psychotropic medications of an extremely vulnerable population (mentally retarded individuals, often institutionalized), found himself the subject of an investigation before his documentation about the misconduct of another was examined. During the time of his wife's terminal illness, Sprague was

obliged to defend himself as well as his motives for speaking up. He says of the experience of whistleblowing: 'the analogy to a disaster is not accidental, but deliberate. Many whistleblowers never recover from their experiences, especially if their families are not strong.'⁷

Most organizations, including research universities, institutes, and hospitals, value a dispassionate professional effect: we judge this to be more 'objective' and 'scientific'. While, as members of these organizations, we can appreciate enthusiasm and even passion, we inculcate a detached and unemotional style of delivery when discussing results. This supports the myth of research as impersonal, unbiased, and impartial. The process of deciding to file a complaint about the veracity of work can be so threatening that by the time a person has summoned the courage to convey the information in some fashion (whether by seeking advice from someone who feels obliged to pass the information along or by invoking a more formal official procedure to report concerns), the strain of going against the grain of the organizational culture by 'complain[ing]' is likely to have extracted a toll. Those who fall under the general umbrella of whistleblowing – calling attention to something that is not right in their larger group environment – are likely to be stressed, and may experience severe psychological distress. In turn, this translates into behaviour that can be emotional and erratic. This, of course, undermines the credibility of the whistleblower, extends their isolation, and exacerbates the toll of whistleblowing, in a continuing vicious cycle.

Dislike breeds mistrust. It takes a long time for people who like and respect each other to come to the point where they conclude that serious things are amiss: those who like each other search for alternative explanations and work together to try to resolve problems. However, if communications or relationships are not good among group members, it becomes far easier to believe ill of others, not ask the right questions, or, if these are asked, not to get, or really hear and appreciate, suitable answers. Social psychologists term this the 'sinister attribution bias': once relationships fray, it is far easier to attribute malice to the actions of those you do not like than to those you do.⁸ The combination of low status in an organization with lack of access to information, communication, and good will or trust among group members easily leads to misunderstandings and conflict. In turn, we then start labelling others and concluding things about their character.

Attribution theorists find that there are two stages to concluding that the conduct of others arises from their dispositions rather than the circumstances in which they find themselves: first, we consider whether the action was intentional. If we conclude that it was intentional ('she went in and filed the report when she didn't have to'), and the result on us is strongly positive or negative, we are more likely to conclude that the outcome is the result of the person's disposition.⁹

To give an example, when Margot O'Toole raised questions about the work of The reza Imanishi-Kari, the points she made about problems with the quality of the work were all validated – eventually. Yet, even today, more than 20 years later, the prevailing understanding in the scientific community is that she was a jealous, obsessive failure. In a review of a book on the 'Baltimore Case' by the science historian Daniel Kevles one of us (CKG) wrote:¹⁰

'Kevles starts by describing Margot O'Toole, the young post-doctoral fellow who questioned the accuracy of a paper of which Baltimore was a coauthor. Kevles reports that she was "virtually bred to confront trouble." Even more, "Civil rights protests and demonstrations against the Vietnam War had flourished during her undergraduate years, likely encouraging her familial propensity for dissent." The sources for the paragraph containing the latter statement include notes of a telephone conversation in 1993 between two people neither of whom is O'Toole or anyone in her family. In contrast, Kevles learns from direct interviews with Baltimore that his family's "left-leaning" heritage and his exposure to the McCarthy hearings as a high-school student undergirds his principled objections to Congressional inquiries into questioned science.

'Thereza Imanishi-Kari, O'Toole's supervisor and a coauthor with Baltimore of the paper in question, is described as "vivacious, competent, quick on her feet and formidably smart." On the next page, we learn that she "broke the laboratory rules against smoking and neglected to meet M.I.T.'s requirements for getting ahead." Whereas Imanishi-Kari merely "neglected to meet" standards for getting ahead, what O'Toole "seemed at heart to crave was recognition as an insightful scientific critic and, more important, legitimacy as a practicing scientist who was not incompetent because she could not get Bet-1 to work."

The bias Kevles demonstrated is starkly revealed in this comparison. This sort of bias is exactly what we all must guard against.

Sometimes the whistleblower digs in. While many give up in the face of these daunting barriers, those who persist tend to dig in, out of some combination of principle, stubbornness, commitment, and personality. This persistence can make the stress even worse, and has the side effect of making the whistleblower appear vindictive and self-righteous, further undercutting his or her credibility, likeability, and the probability of gaining a fair hearing in the institution. The whistleblowing experience often dominates the life of an individual caught up in it, becoming the primary focus and driving motivation. The more insistent such a person becomes, the more those made uncomfortable by the strength of emotion and inconvenience of the allegations push them away.

Sometimes the whistleblower is being disciplined, which further clouds the issue. People who seek to expose wrongdoing are often the subject of disciplinary action, so it is difficult to discern whether there is, in fact, a serious problem or simply a person attempting to divert attention from his or her own deficiencies. Charges often arise from the disgruntled, and the charges can be both correct and at the same time deeply rooted in the same shortcomings that led to the discipline in the first place. The charges can just as easily be mistaken or confused, and there is hardly anyone as exasperatingly stubborn as the person with a cause; either way – right or wrong – this is not an easy individual with whom to interact. Since it is natural for us to prefer the prickly and

obsessed to be wrong, our capacity to assess the charges can be strongly affected by assimilation biases that give greater weight to information that supports preferred conclusions.¹¹

It is small wonder that these people, who are disrupting organizational life often in an overly emotional manner, come to be disliked and may not be heard in a dispassionate or open-minded manner. This effect is only exacerbated when the person against whom their charges are filed is well-liked, very powerful, or both, and who therefore finds it easy to get others to accept his derogatory characterizations of his accuser. Because reputations in institutions are built through a combination of direct experience and word of mouth, it is simple – and commonplace – for the better known and senior person to skew the perception of a less-known or junior person. If the 'answer' is known before the facts are collected and reviewed ('she's just jealous or trying to divert attention from her own failures', etc.), determinations rooted in fact may become well-nigh impossible to achieve.

Complexity and messiness are endemic in these situations. Numerous intertwined issues make things even worse for those who must resolve the allegations. Charges are followed by counter-charges, often filed on a number of fronts. It is not unusual for a whistleblower to allege wrongdoing not only with handling of data or authorship credit, but also of misuse of grant funds, regulatory violations (e.g. treatment of animal subjects or hazardous substances), or violation of intellectual property requirements (Box 15.4).

BOX 15.4 The Berge case

Pamela Berge was a PhD student in nutritional sciences at Cornell University who collaborated with researchers at University of Alabama-Birmingham (UAB). She did her thesis research on cytomegalovirus (CMV), a common infectious cause of birth defects, as a possible cause of low birthweight. UAB had built up an important database on maternal and congenital CMV, and researchers there extended access to Berge, including a stint in residence at UAB as a visiting graduate student. After receipt of her degree, Berge attempted to publish papers on her findings, but her manuscripts were repeatedly rejected.

At a meeting of the Society of Epidemiological Research in 1990, Berge attended a presentation of research by another graduate student working with the group. Concluding that her own work had been plagiarized, Berge filed charges with UAB. Two investigations found her allegations to be baseless. Berge then secured copies of UAB grant applications through the Freedom of Information Act and, rather than going to the Office of Research Integrity of the federal government, next filed a federal lawsuit alleging extensive wrongdoing by UAB in its annual progress reports filed with the National Institutes of Health, including 'submerging' her work and countenancing plagiarism of it by a graduate student. The basis for her lawsuit is an old, Civil War-era statute known as the 'Lincoln Law' after the president who advocated for it. The law is designed to reward those who helped

BOX 15.4 (continued)

bring miscreants to justice by reporting (blowing the whistle, as it were) those profiteering in supplying to the government, originally those selling defective items to the Union Army.

After a 10-day jury trial, a decision was rendered in Berge's favour, the jury effectively agreeing that she had been robbed, and awarding \$1.65 million in damages, of which \$489 000 was to go directly to Berge plus an additional \$215 000 in punitive damages.

UAB appealed. While this process had been unfolding, the Office of Inspector General of the federal agency heard of the lawsuit that Berge had filed, and conducted a separate investigation, to assess whether the office should be prosecuting the matter as a federal crime. That investigation reported 'no evidence' of criminal violations in either grant applications or progress reports. It went on to say that many of Berge's assumptions behind her allegations were 'in error or exaggerations of the truth'. However, this report never made its way into evidence at the federal trial on Berge's charges.

When the UAB appeal came up, the earlier court judgment was entirely reversed. In its decision, the appeals court rejected all of her claims, saying that 'once the surface is scratched, there is nothing to Berge's claim except her complaint that Fowler [the other graduate student] did not give Berge's work the notice she felt it deserved'. The court went on to say, 'we also decide that no responsible jury could conclude that a multi-million dollar grant, continually renewed over a period of more than a decade, undertaken by three internationally-respected scientists engaged, in part, in the collection of the world's leading database on CMV, would be reduced or eliminated due to UAB's lack of expertise in an area that could only be bolstered by the work of an unknown graduate student in nutritional sciences - work that when reviewed by independent scientists at peer-reviewed journals was determined to be "scarcely comprehensible ... extremely difficult to read and even more difficult to evaluate ... and so cavalier in its design and conduct as to induce great skepticism in any findings reported from it." The hubris of any graduate student to think that such grants depend on the results of her work is beyond belief.'³⁷

This should be no surprise, because it makes sense on two levels. First, those who commit research misconduct have frequently been found to be guilty of financial or other improprieties; the evidence is that a person who cuts corners in one arena (say, recording data points) is more likely to be taking shortcuts in another as well. A clear example of this is Mark Spector, who fabricated research results; by the time the magnitude of his scientific fraud was fully revealed, other unsavoury aspects of his conduct had also come to light: he did not hold the undergraduate degree he claimed, he was engaged in passing bad cheques, etc. As described by Kohn³ (pp. 208-10):

'After the forgery had been exposed, Spector's credentials were checked. It was found that, as a student in Cincinnati, he had been sentenced to a suspended prison term for forging his employer's signature on two cheques made out to himself. Another investigation revealed that a paper Spector had published with C. Douglas Winget was also under suspicion of having been fabricated by Spector ... When the wrongdoing of Spector became evident, Winget tried in vain to replicate this exciting experiment. This was thus another footprint in Spector's falsification trail.'

Second, once relationships have frayed and a sinister attribution bias kicks in, it is easy to see wrong at every turn.

The sheer complexity of such a situation is dismaying to those in the hierarchy who simply see a total mess that could be avoided (they hope) if they simply 'kill the messenger' by casting out the troublemaker who is raising these undesirable points in an apparently unseemly fashion.

Whistleblowers are frequently wrong. Furthermore, would-be whistleblowers are frequently - in fact, usually - mistaken. In most organizations, the vast majority of complaints filed are not substantiated upon investigation. That is, complaints arise because of misunderstandings, personality conflicts, incomplete information, and the like. Because most allegations are not substantiated or are disproven, it increases the difficulty of the true whistleblower who is correctly raising a concern, as the expectation among those to whom he complains is that he has simply got things wrong.

One of us (CKC) was personally responsible for receiving allegations of misconduct for a period of almost eight years on the campus of a major US research university with more than 30 000 students. From records of four years of that time (1989-93), annually somewhere between 80 and 90 concerns about the integrity of research were brought to the central campus office responsible for receiving such complaints. As background, the USA uses a two-part system for reviewing allegations of misconduct: for those charges that rise to the level of the definition of misconduct (as opposed to disputes, misunderstandings, and items not covered by the policies on misconduct), first an 'inquiry' is conducted as a form of triage. This is supposed to be a structured, although relatively quick, review of the charges. Those that demonstrate sufficient grounds then move on to a more legalistic and formal procedure known as an 'investigation'.

Of the questions and concerns handled in that four-year period, only 14 of the 80-90 contacts for assistance led to 'cases' processed under the university's academic integrity policy. The majority were inquiries that ended the matter there. Three of the proceedings were full-fledged formal investigations, each preceded by an inquiry. In that time, there was one official finding of research misconduct. Put another way, of the problems brought to attention annually, three to five were judged as sufficiently serious or credible to require inquiries under the procedures generally adopted in the USA following federal guidelines, and of those, one investigation resulted every other year. Only one of the investigations resulted in a finding of research misconduct according to the prevailing legal definition.

At the same time, in the cases that did not result in a finding of misconduct, most featured recommendations that aspects of the conduct of the questioned researchers were

found lacking in expected professionalism in research or mentoring. Such shortcomings in conduct were addressed through other mechanisms than sanctions for research misconduct, such as retraining in good practice, increased oversight, or restrictions of privileges.

Although these numbers are not formal, they seem to agree with other numbers that are reported in an informal fashion, as well as with the information in the USA of cases overseen by the federal research-funding agencies. For example, in the same period of time as covered by the informal Gunsalus numbers, the National Science Foundation reported 222 cases, of which 10 resulted in federal investigations and 30 were investigated by the home institutions of the researchers, and there were eight investigations that both federal and institutional officials investigated. In that time, four cases resulted in formal findings of misconduct. The Office of Research Integrity (ORI) (using a different metric for reporting) reported receiving 'around 200' allegations per year, of which 30 became formal investigations each year, while at the same time, about 20-30 cases were 'closed' (apparently, the cases closed could be from the same or previous years). In any given year, in that era, ORI reported that it closed 50% of its cases with findings of misconduct. Since that time, they have revamped their procedures, and numbers are now kept more precisely. The volume of concerns and complaints seems to be rising in the wake of continued publicity about research misconduct and greater awareness of reporting mechanisms. ORI, for example, reported its highest caseload ever in 2006.^{12,13}

The fact that complainants are frequently wrong makes sense. It is often difficult, especially for someone at the bottom of a hierarchy, to have access to full information about a given situation. Imagine a junior scientist lodging a complaint about having been denied credit for his or her work on a project. Frequently, that person will be intimately familiar with his or her own labours, but have no clue about the work of others in the group, the history of the project (which may be lengthy), its funding arrangements, or the efforts of collaborators in other locations. It is easy to over-appreciate the role that one has played oneself and to downplay the work of others.

How big is the problem? Unfortunately, we do not know how common such acts or persons are. In spite of a number of ingenious proposals over the years for assessing the true incidence of serious acts of research misconduct, the scientific community has vigorously resisted such scientific efforts, even though they were proposed solely to establish prevalence rates of gross misconduct, and were specifically designed to be brief cross-sectional studies, and *not* to be a way of policing science on any continuing basis.^{14,15} We are left instead with a series of surveys asking questions such as whether an individual is 'aware' of a range of various research misdeeds. Most of these surveys take no account of multiple reports of the same act, nor do they use precise or even common definitions of what constitutes research misconduct. Because of that, we have difficulty placing any reliance on them. Nonetheless, for the sake of completeness, we note that the range of misdeeds that they report range from under 2% for six of the top 10 'misbehaviours' (although, in that survey, 33% of respondents said they had engaged in at least one of the top 10 misbehaviours during the previous three years) to between 44% and 50% of respondents having personal knowledge of two or more types of misconduct.^{16,17}

A growing problem. The number of complaints arising from interaction problems will always be larger than the number of validated cases of research misconduct. Most cases that become formal reviews of conduct will involve significant animosity among the parties by the time they require investigation, so the need for rigour in assessing allegations and professional conduct is intense. It is impossible to know how many of the complaints that come forward have substance to them and are yet not properly reviewed. Similarly, we cannot know how many complaints never come forward because of the known costs of whistleblowing. What we do know is that few significant cases of research misconduct have ever been discovered *except* through the actions of whistleblowers.

At the most serious end of the spectrum, whistleblowers have brought to light clinical findings that have affected treatment protocols nationwide based on fictitious patients (Breuning) or enrolled patients in trials when the patients did not fit the protocols.^{18,19} Numerous cases (Darsee, Long, Slutsky, and Poehlman) would have distorted the research record, the continuing progress of science, and ultimately the treatment of patients. Fabricated or falsified data that make their way into print lead to a misuse of resources, energy, and the hopes of investigators in fruitless attempts to replicate and build upon that work (see Kohn,³ p. 104). Plagiarism deprives the rightful authors of credit for their work, and advances frauds at the expense of others. These are effects from which the community of scholars deserves and needs to be shielded. Whistleblowers are the ones who make that possible. That they are difficult to deal with and often wrong does not change this calculus.

As we have said, people who are prepared to blow the whistle when they identify misconduct, and are prepared to fight the subsequent battle, tend to have prickly personalities – made more prickly by the reaction that their whistleblowing provokes. On the organizational side, and making things worse, it is rare for institutions to have the expertise to provide a rigorous, credible investigation, as running a structured, analytical review process that meets all legal and scientific standards in a quarrel about scientific data is hugely demanding. In our experience, this is not often achieved – and this in a country with decades of experience with an official, national policy that must be followed to sustain a finding of research misconduct. A 1998 study by the ORI documents the challenge.²⁰

'ORI conducted a content analysis of 21 inquiry reports that were not submitted to the Office of Research Integrity because an investigation was not recommended and ORI had not previously requested the report. ... This study demonstrated that more than half of the institutional inquiry reports that were not submitted to ORI were significantly deficient. Fifty-seven percent of the reports did not contain the information required to establish PHS jurisdiction. Thirty-three percent contained information on no more than four of the nine criteria used to determine whether an investigation was warranted and another 28 percent were marginal, covering only five criteria. Seventy-one percent provided information on only three or fewer criteria for determining compliance with the regulation. And finally, 57 percent of the reports did not contain the detailed information required to justify the decision that an investigation is unwarranted.'

Kay Fields, a senior scientist in the Division of Investigative Oversight at the US Office of Research Integrity (ORI), confirms that recent years have seen little improvement. She comments that 'only very rarely do we receive a report from an institution, as required by Federal policy, that is sufficiently complete to assess on the first round whether the finding arrived at by the institution can be sustained. Typically, we must request additional information, and sometimes additional investigation, to develop a conclusion about the sustainability of the finding'.²¹ This state of affairs can be understood when reflecting upon how infrequently individual universities are called upon to conduct the most serious investigations, how often administrative staff members turn over, and the brevity of the half-life of organizational memory. Alan Price, former Director of the Division of Investigative Oversight at the US Office of Research Integrity, now a private consultant, comments that 'most of the Research Integrity Officers at research institutions that we worked with and/or trained in the 1990s have retired or moved on from their positions, leaving a generation of RIOs to be educated in what ORI wants and needs in investigation reports, admission statements, and documentation'.²²

We are left having to rely on whistleblowers, so we must change our attitudes. The scientific community will not allow research into the incidence of scientific misconduct, and daily audit to flag serious misconduct is ponderous and would raise all sorts of practical and social issues. At the same time, much clinical research is not replicated. Journal peer review, which starts with the assumption that authors are doing their best to tell the truth, is well-nigh useless as a way of revealing misconduct, because the editors and reviewers are not in the authors' laboratory. So, we are left with whistleblowers to alert us to serious problems. Unfortunately, when problems arise, the procedural path forward for such individuals is often not clear, and their reception is often hostile. The irony of our instinctive responses is that we resist this knowledge, even when knowing about problems is clearly in our best interests, both inside the research organization where the problem arises and for the larger research community that depends upon the veracity of reports for continued forward progress. It should be obvious that we must change our attitudes and responses to whistleblowers if we are to move ahead.

Practical advice for responding to whistleblowers

Policies and people

Responding effectively, professionally, and responsibly in the face of the myriad challenges presented by a whistleblower boils down to a realistic set of policies implemented by sensible people. Part of such a response to whistleblowers requires that we understand conceptually the problems discussed above and be prepared to counteract the natural impulses that can lead us and our research institutions astray. The central point that we must understand, accept, and make part of all our actions is that, at several critical junctures, our intuitive response will be the wrong one.

Provide clear guidance: policies, procedures, protections, and resources

The organizational dynamics that we have already mentioned vastly complicate the effective receipt and processing of reports from whistleblowers. Not only do all these elements muddle and blunt a strong institutional response, but the underlying conflict that often leads to allegations being lodged in the first place is also likely to be a confounding factor. Many people, already distrusting a story from a dislikable complainant, will recoil from the unpleasantness of it all and hope to avoid it.

In addition to all this, there are the problems that occur when the institution's policies are not clear or helpful, and do not take account of the barriers that the institutional structure can present to those who wish to bring potential wrongdoing to light. For example, most working scientists are unlikely to know what policy applies to their particular concerns, or where to report them.

Devise institutional responses understanding the concerns of the whistleblower

For the organization wanting to ensure the integrity of research done under its auspices, it pays to consider these situations from both sides. The person with low power in the institution, and whose future is often at the mercy of his or her supervisor(s), faces a difficult and challenging path. At the same time, especially if the matter is a fundamental one of ethics, members of the institution may feel a strong obligation to address it. Indeed, institutional policies may require reporting of serious concerns. It should be borne in mind that research suggests that employees go to external authorities 'only once they come to believe that internal channels are closed to them, that the organization is not moral, and that senior management is inert or complicit in the wrongdoing'.²³

When developing institutional policies, it is helpful to imagine that you are a junior scientist who begins to have concerns about data in the laboratory in which you work. What should you do? How do you chart a reasonable professional course? Where do you get advice? Who can help you make a reasonable cost-benefit analysis for each course of action? Each of these questions should have clear and available answers, and resources to assist in sorting out a solid, professional approach.

Make policies and help easy to find

There should be a website and brochures or other documents that explain the institution's policies on misconduct, including definitions of what is considered against the rules, how to report misconduct, what protections are provided against retaliation, and other related matters (Box 15.5). Resource people – those who can advise and guide anyone with concerns – should be clearly identified and should be readily accessible. It does little good to provide an office to advise those with concerns if the office is not staffed or is not open. Not only must the policies be clear and accessible, but they should also be provided to each person who raises a concern, so each knows fully his or her options.

BOX 15.5 Useful institutional policies

- Research misconduct (definitions and procedures)
- Responsible professional conduct (see sample below)
- Support resources for employees (see UCSF plan)
- Non-retaliation for bringing information to light (see sample definitions)
- Workplace violence (information for employees on what to do in the event that they feel threatened by physical violence)

Sample policy on non-retaliation: University of California San Francisco, excerpt on policy⁴⁰

'Reporting allegations of suspected improper governmental activities – Any person may report allegations of suspected improper governmental activities. Allegations of suspected improper governmental activities may also be reported anonymously. Further details on the role, rights, and responsibilities of the Whistleblower can be found in Section IV A of this policy.

A. Making reports – The University recommends that any reports by persons who are not University employees be made to UCSF's Whistleblower Coordinator (see Section IV A). Normally, a report by a University employee of allegations of a suspected improper governmental activity should be made to the reporting employee's immediate supervisor or other appropriate administrator within the operating unit. However, in the interest of confidentiality when there is a potential conflict of interest or for other reasons, such report may be made to the Whistleblower Coordinator or another University manager who may reasonably be expected to review the alleged improper governmental activity on behalf of the University. All University employees, and especially academic or staff employees in management roles, should be aware of and alert to any communications that may constitute reports of allegations of suspected improper governmental activity and be prepared to refer such reports to the Whistleblower Coordinator.

B. Retaliation protection – The rights and protections of University employees and applicants for employment when making protected disclosures are covered by the Policy for Protection of Whistleblowers from Retaliation and Guidelines for Reviewing Retaliation Complaints.⁴¹ Below is a summary of the local implementation:

Filing complaints – UCSF is committed to protecting employees and applicants for employment from interference with making a protected disclosure, or retaliation for having made a protected disclosure, or for having refused an illegal order as defined in this policy. A retaliation complaint (grievance plus sworn statement) may be filed under an applicable grievance or complaint resolution procedure, or with the Whistleblower Coordinator, or with the employee's supervisor. Employees who elect to file a grievance unaccompanied by a sworn statement made under penalty of perjury that its contents are true or

BOX 15.5 (continued)

are believed to be true are not covered by the retaliation provisions of the California Whistleblower Protection Act. The complainant must file the complaint within 12 months and must sufficiently detail facts to support the allegation.

Whistleblower Coordinator – The Whistleblower Coordinator accepts and reviews all retaliation complaints and administers local processes related to investigation and resolution of retaliation complaints. Where appropriate, the Whistleblower Coordinator refers matters to existing grievance procedures and reviews conclusions and remedies for cases heard through existing grievance procedures. The Whistleblower Coordinator may also refer a complaint to a designated Retaliation Complaint Officer for fact-finding where a grievance process is not appropriate. In such cases, the Whistleblower Coordinator receives and acts on fact-finding reports submitted by retaliation complaint investigations.

Retaliation Complaint Officers – Under the direction of the Whistleblower Coordinator, designated Retaliation Complaint Officers (RCOs) ensure a competent investigation is conducted on the allegation of retaliation or interference. The RCO works with the Whistleblower Coordinator to ensure the following:

- existing grievance procedures, where applicable, allow for adequate investigation and report of RCO findings on the allegations; or,
- hearing officers or arbitrators, where applicable, adequately cover the allegations; or
- a competent and timely fact-finding is conducted on allegations that are not appropriately handled by existing grievance processes. The RCO shall present findings of fact to the Whistleblower Coordinator within 120 days unless an extension is granted by the Coordinator.

The designated RCOs for UCSF are:

- Campus Human Resources Director for staff employees on campus;
- Assistant Director for Human Resources for staff employees in the Medical Center;
- Director of Faculty Relations for academic employees, including faculty;
- Director of Student Relations for students.

C. State Auditor – Reports of allegations of suspected improper governmental activities may be made to the State Auditor. Under the law, the State Auditor is prohibited from disclosing the identity of a whistleblower unless he or she obtains the whistleblower's permission to do so, or when the disclosure is to a law enforcement agency that is conducting a criminal investigation.⁴²

BOX 15.5 (continued)

Sample policy on responsible professional conduct: University of Illinois at Urbana-Champaign policies on academic integrity⁴²

The University of Illinois is dedicated to learning and research and hence is committed to truth and accuracy. Integrity and intellectual honesty in scholarship and scientific investigation are, therefore, of paramount importance. It is the responsibility of the faculty and staff to maintain high ethical standards of professional integrity.

Responsible professional conduct: guidelines for teaching, research, and service

The Faculty Senate has endorsed the following set of guidelines for the campus. Members of the University of Illinois at Urbana-Champaign campus community are expected to adhere to the highest standards of professional conduct in carrying out their teaching, research, service, and other professional responsibilities. Such conduct is subject to norms and ethical codes that vary somewhat among disciplines, as well as to differing individual perceptions and interpretations; but certain general ethical guidelines reflecting the commitment of the campus to these standards are applicable to all faculty, staff and graduate assistants on the Urbana-Champaign campus.

Some types of conduct, expressly forbidden by University rules and regulations (see, e.g., University of Illinois Policy and Procedures on Academic Integrity in Research and Publication, Policy and Procedures for Addressing Discrimination and Harassment, and University of Illinois Policy on Conflicts of Interest and Commitment) may have severe consequences. Others, not formally proscribed, are nonetheless properly included among the matters to which campus standards of professional conduct apply. Some are addressed in the formalized codes of ethics some disciplines have adopted or are reflected in prevailing practices in various disciplines. Where the University's standards surpass such other norms, it is the University's standards to which members of the campus community are expected to adhere.

The following guidelines relate to activities involved in fulfilling instructional responsibilities, in acquiring and using data in the course of conducting research, in authoring scholarly publications, and in interacting professionally with other individuals on this campus and elsewhere. No set of guidelines can cover all of the kinds of cases to which professional ethical considerations apply. Moreover, the interpretation of specific guidelines in actual situations may be uncertain, and the assessment of complex situations to which a number of different standards and other important considerations apply may be difficult. Those who find themselves faced with such further problems in these areas of academic life should seek the advice and counsel of campus and professional colleagues and appropriate administrators who may be able to offer advice or suggest actions to mitigate the problem.

BOX 15.5 (continued)

Instructional responsibilities

Members of academic units have a fundamental obligation to respect the dignity of all students and to foster their intellectual growth and development.

- (a) Faculty members should explain at the beginning of each course the grading criteria to be used and the requirements for successful completion of the coursework. Such criteria and requirements should be clear and should be applied consistently and fairly.
- (b) Faculty members should ensure that students are provided feedback and guidance to facilitate their academic progress.
- (c) Faculty members should acknowledge sources of and observe copyright for materials prepared for course distribution.
- (d) In any student-faculty collaboration, the intellectual contributions of the student should be fully and appropriately acknowledged.

Handling of data

Individuals conducting research are obligated to record and preserve data in a manner that accurately reflects the work done, and that allows appropriate scrutiny and evaluation of those data.

- (a) Falsification of data, fabrication of data, and unacknowledged appropriation of the data of others are unethical; they are also violations of the University's academic integrity policy.
- (b) Data (including source materials) should be retained for an appropriate length of time after publication so that they are available for inspection by collaborators or, when appropriate, by other qualified individuals.
- (c) Data should never be withheld from collaborators except for purposes integral to the project.
- (d) Individuals conducting research should consider carefully all results, including those that do not fit research expectations.

Authorship, attribution of credit, and other publication practices

Authors should conform to formally promulgated and/or generally observed standards and practices for authorship and attribution of credit in their disciplines.

- (a) Plagiarism is unethical and is a violation of the University's academic integrity policy.
- (b) Authorship should be accorded to those who contribute both actively and meaningfully to a study.
- (c) Authors (including co-authors) have responsibility for their publications and should respond in an appropriate forum to legitimate inquiries about their data, methods, or interpretations.

BOX 15.5 (continued)

- (d) Authors should adhere to the standards and requirements of journals to which they submit manuscripts, particularly with respect to simultaneous submissions and originality of research.
- (e) Authors should acknowledge funding sources that support their research.
- (f) Authors should publish only those findings that result from careful consideration of the materials under study and, when appropriate, replication or verification of the study.
- (g) Authors should present in publications of experimental research sufficient information about methodology to permit others to repeat or extend the work.

Professional conduct

Members of the University community must honor contractual obligations in teaching, research, public service, and other professional responsibilities. They should further conduct themselves in a professional and collegial manner in all dealings with each other.

- (a) Members of academic units should provide an environment for professional development of all staff.
- (b) Individuals assessing the work of others should base their assessments on appropriate professional criteria. Due to the inherent conflicts of interest, no individual should initiate or participate in institutional or educational decisions involving a direct benefit or penalty to a person with whom that individual has or has had a sexual relationship.
- (c) Members of academic units should seek collegial resolution of professional disputes.
- (d) Individuals engaged in teaching, research, or public service should respect and abide by legitimate and reasonable requests for confidentiality.
- (e) Individuals conducting research have an obligation to follow procedures that assure the ethical treatment of human subjects and animals, as well as applicable regulations.
- (f) Individuals engaged in research and teaching should understand and comply with pertinent regulations for health and safety in the workplace; should see to it that students and collaborators in learning or research projects understand and comply with these regulations; and should work to minimize risks to health and safety in the learning or research environment.
- (g) Individuals conducting research should spend research monies in ways consistent with the goals stated in contract documents.
- (h) Individuals conducting research and/or the officials of their administrative units have an obligation to keep clear records of expenditures and to make these records available to appropriate parties.

BOX 15.6 Resources for whistleblowers

The UK Research Integrity Office (UKRIO)

Part of the Programme of Work for UKRIO is to provide 'help-line and guidance for those involved in allegations and concerns over the conduct of research in health and biomedical sciences'.

From its website:⁴³

'The Office is available to provide guidance to those who wish to raise concerns or seek advice on any aspect relating to the conduct of research. The Office will receive requests for guidance on the Office Helpline or in Emails, fax or written format. On receiving requests for guidance the Office will fulfil an impartial advisory role, ensuring that the most appropriate advice and guidance is made available from the Office Team or through the Register of Advisers.'

Public Concern at Work⁴⁴

Public Concern at Work (PCaW) is an independent authority on public interest whistleblowing. It was established as a charity in 1993 following a series of scandals and disasters. PCaW has played a leading role in putting whistleblowing on the governance agenda and in influencing the content of legislation both in the UK and abroad.

PCaW promotes compliance with the law and good practice in organizations across all sectors. In practical terms, it focuses on the responsibility of workers to raise concerns about malpractice and on the accountability of those in charge to investigate and remedy such issues. It does this by:

- offering free advice to people who are concerned about danger or malpractice in the workplace but who are unsure whether or how to raise the matter;
- providing compliance toolkits, training, and consultancy on accountability in organizations and on self-regulatory and regulatory cultures;
- influencing public policy through research and educational activities.

The Government Accountability Project (GAP), USA⁴⁵

GAP's mission is to protect the public interest by promoting government and corporate accountability through advancing occupational free speech and ethical conduct, litigating whistleblower cases, publicizing whistleblower concerns, and developing policy and legal reforms of whistleblower laws. GAP was founded in 1977 as a non-profit, public-interest organization. Its national office has been in Washington, DC since the institution's inception (a Seattle office was opened in 1992).

GAP's major programme initiatives focus on both government and corporate accountability related to nuclear oversight, food and drug safety, worker health and safety, international reform, and national security. It develops whistleblower laws and policy reform both domestically and internationally. GAP also conducts

BOX 15.6 (continued)

an accredited legal clinic for law students, and offers a year-round internship programme for undergraduates and law students.

'How to blow the whistle and still have a career afterwards'

This is the title of an article by CK Gunsalus⁴⁶ that is specifically directed at those in the scientific community concerned about research misconduct. It can be provided to whistleblowers as a useful resource.

Whistleblower's Bill of Rights

In late 1995, the Commission on Research Integrity of the US Public Health Service drew up a list of the rights and responsibilities of whistleblowers (in their 'Whistleblower's Bill of Rights'). They proposed that retaliation against a whistleblower be defined as a form of misconduct, and that institutions had a duty to protect whistleblowers by giving them relief against reprisals and by holding those who retaliate accountable. Institutions should give whistleblowers, who often have special expertise, the opportunity to comment on relevant information during the process. The process must be timely, whistleblowers must assist it, and, at its conclusion, institutions have a responsibility to credit whistleblowers whose allegations are substantiated. At the same time, the whistleblower must allow the process an opportunity to function, while maintaining confidentiality, and must understand the consequences for those they accuse, and be prepared to correct their own errors.

Responsible Whistleblowing: A Whistleblower's Bill of Rights¹

- (a) **Communication:** Whistleblowers are free to disclose lawfully whatever information supports a reasonable belief of research misconduct as it is defined by PHS policy. An individual or institution that retaliates against any person making protected disclosures engages in prohibited obstruction of investigations of research misconduct as defined by the Commission on Research Integrity. Whistleblowers must respect the confidentiality of sensitive information and give legitimate institutional structures an opportunity to function. Should a whistleblower elect to make a lawful disclosure that violates institutional rules of confidentiality, the institution may thereafter legitimately limit the whistleblower's access to further information about the case.
- (b) **Protection from retaliation:** Institutions have a duty not to tolerate or engage in retaliation against good-faith whistleblowers. This duty includes providing appropriate and timely relief to ameliorate the consequences of actual or threatened reprisals, and holding accountable those who retaliate. Whistleblowers and other witnesses to possible research misconduct have a responsibility to raise their concerns honorably and with foundation.
- (c) **Fair procedures:** Institutions have a duty to provide fair and objective procedures for examining and resolving complaints, disputes, and allega-

BOX 15.6 (continued)

tions of research misconduct. In cases of alleged retaliation that are not resolved through institutional intervention, whistleblowers should have an opportunity to defend themselves in a proceeding where they can present witnesses and confront those they charge with retaliation against them, except when they violate rules of confidentiality. Whistleblowers have a responsibility to participate honorably in such procedures by respecting the serious consequences for those they accuse of misconduct, and by using the same standards to correct their own errors that they apply to others.

- (d) **Procedures free from partiality:** Institutions have a duty to follow procedures that are not tainted by partiality arising from personal or institutional conflict of interest or other sources of bias. Whistleblowers have a responsibility to act within legitimate institutional channels when raising concerns about the integrity of research. They have the right to raise objections concerning the possible partiality of those selected to review their concerns without incurring retaliation.
- (e) **Information:** Institutions have a duty to elicit and evaluate fully and objectively information about concerns raised by whistleblowers. Whistleblowers may have unique knowledge needed to evaluate thoroughly responses from those whose actions are questioned. Consequently, a competent investigation may involve giving whistleblowers one or more opportunities to comment on the accuracy and completeness of information relevant to their concerns, except when they violate rules of confidentiality.
- (f) **Timely processes:** Institutions have a duty to handle cases involving alleged research misconduct as expeditiously as is possible without compromising responsible resolutions. When cases drag on for years, the issue becomes the dispute rather than its resolution. Whistleblowers have a responsibility to facilitate expeditious resolution of cases by good faith participation in misconduct procedures.
- (g) **Vindication:** At the conclusion of proceedings, institutions have a responsibility to credit promptly – in public and/or in private as appropriate – those whose allegations are substantiated.

It is in the research institution's best interest to learn of problems early when they are most amenable to intervention and correction. This is best for the whistleblowers as well. Beyond the institution's own policies, there are resources available for whistleblowers that include step-by-step ways to think about the process; organizations should be familiar with such resources, and provide links to them (Box 15.6).

Provide choices for reporting

It is essential to provide an array of choices to the would-be whistleblower: if there is only one place to lodge a complaint, and that place is with the very person about whom