

Managing allegations of scientific misconduct and fraud: lessons from the “Hall affair”

If we can learn from this, it will have made a contribution to the pursuit of integrity in research

ON BEGINNING HIS RECENT SABBATICAL at the Mayo Clinic, Professor Michael O’Rourke, a renowned academic from the University of New South Wales, was handed a slim volume entitled *Honor in science*. First published in 1984, it is recommended reading for research trainees as a guide to ethics and the values of research. Significantly, there are now more than 50 000 copies in circulation.¹

Activities such as the dissemination of this booklet are central to ensuring society’s trust in the integrity of research. More than 20 years ago, Al Gore Jr (then a United States congressman, and later Vice President in the Clinton administration), as chairman of the first congressional hearing into scientific misconduct, noted: “At the base of our involvement in research lies the trust of American people and the integrity of the scientific exercise.”² There is no reason to believe that this would be any different in Australia.

But trust in our research enterprise has recently been shaken by the “Hall affair” at the University of New South Wales (UNSW). At the end of 2001, complaints of research misconduct were levelled at Professor Bruce Hall, a Professor of Medicine at UNSW, and an internationally acclaimed scientist in immunology. The complainants were members of Hall’s research laboratory and it has taken more than 2 years to resolve their allegations. During this time, there were four different inquiries and reports, which reached different conclusions (see Box). From the beginning of the affair, all the allegations have been vigorously denied by Hall.

Sadly, as it unfolded, the Hall affair illustrated the reality that allegations of research impropriety affect the careers of both the accused and the accusers and, in the process, can divide an institution and damage its reputation.¹¹ Most importantly, such allegations jeopardise public trust in the integrity of research. Further, they provide fuel for a media that feeds on human discord, and, dealing in perceptions and innuendo, accelerate this corrosion.

The Hall affair was first publicly dramatically exposed on the Australian Broadcasting Corporation (ABC) Radio National’s *Science Show*,⁴ and then clinically dissected by ABC television’s *Four Corners*⁹ (see Box). The media also covered the investigation as it progressed and, on the release of the UNSW Vice-Chancellor’s Report on the affair,⁸ one journalist commented, “Let me get this straight. Plucking data from thin air, recycling old research in new papers and telling porkies in a grant application is OK. Funny, I thought such doings were serious no-nos, construed at best as scientific misconduct, or at worst scientific fraud. Apparently not...”¹²

Looking back over the Hall affair, we are forced to ask ourselves how we can move forward. Are there any lessons to be learned?

Scientific misconduct and fraud may well be seen as an illness, requiring not only diagnosis but also treatment. The diagnosis involves a fast and fair inquiry which, at the same time, must assure the public of its propriety. Unhappily, the Hall affair dragged on for more than 2 years and involved at least four inquiries (see Box).

The initial inquiry by the UNSW’s Dean of Medicine should not have moved beyond a prompt and preliminary process to establish whether there was a case to be answered. In any event, it went on, patently crippled by perceptions of conflicts of interest — including an institution investigating allegations of improprieties carried out in its own backyard!

Herein lies lesson number one — *once allegations of scientific misconduct and fraud have been made, these should be addressed from the beginning by an external and independent inquiry.*

The external inquiry must establish the evidence for misconduct. From the publicly available details of the Brennan

Inquiry,⁷ it appears the inquiry had its hands tied in testing the evidence. Herein lies lesson number two — *the external inquiry should have statutory power to investigate and inquire.* Defining this power will not be straightforward, as the inquiry should not be hijacked by obfuscating and delaying legal tactics.

The Brennan Inquiry was made up of legal and scientific experts, with the latter in the majority. Despite the fact that the framework of research conduct is generic, professional criticisms surfaced in the *Four Corners* program⁹ and elsewhere about the inquiry panel’s lack of expertise in immunology.^{10,13} To allay public concerns about the lack of relevant “expertness” — *inquiries into allegations of scientific misconduct and fraud should consider having on the panel of inquiry at least one expert from the same scientific discipline as the scientists under investigation* — lesson number three!

In the 2002 Reith Lectures for the British Broadcasting Corporation, Onora O’Neill stated that “... ‘Loss of trust’ is, in short, a cliché of our times.”¹⁴ Mistrust of professionals, politicians and public servants and their institutions permeates our society. The antidotes to this “culture of suspicion” are supposedly higher standards of accountability and greater transparency.¹⁴ As it progressed, the Hall affair was not the epitome of transparency and, to date, the details of its four inquiries remain cloistered within academia. Herein lies lesson number four — *to preserve public confidence, inquiries into scientific misconduct should aim for the highest degree of transparency and accessibility of final reports.*

Finally the Vice-Chancellor’s Report (see Box) makes judgements on the outcomes of the Brennan Inquiry, and also conveys opinions on the relative value of scientific abstracts and the nature of data in research-funding applications that are at odds with conventional scientific wisdom.

Even more intriguing is the rationale behind the action of the Vice-Chancellor in judging the findings of the Brennan

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The “Hall affair” — investigations of complaints against Bruce Hall, Professor of Medicine at the University of New South Wales

September 2001 – January 2002

Complaints received by the University of New South Wales (UNSW) from three members of Professor Hall's laboratory, which, among other things, raised allegations of scientific misconduct and fraud, as well as deficiencies in workplace relationships and procedures.³

13 April 2002

Dr Norman Swan revealed details of the complaints against Professor Hall, and discussed these with the complainants on the Australian Broadcasting Commission Radio National's *Science Show*.⁴ Hall, at all times, fiercely denied these allegations.

17 April 2003

The UNSW released the outcomes of two parallel internal inquiries by Professor Bruce Dowton, Dean of the Faculty of Medicine, who carried out the initial investigation of the complaints, and Professor Elspeth McLachlan, Pro-Vice-Chancellor (Research), who focused on complaints that had been raised with the National Health and Medical Research Council. Both inquiries found no overwhelming evidence to sustain the complaints. Both were unable to report conclusively on some matter of alleged scientific misconduct and fraud.³ As to the workplace complaints, the inquiries found there were unsatisfactory working relationships and an unsatisfactory working environment in Hall's laboratory.³

UNSW Vice-Chancellor John Niland announced the setting up of an external inquiry to address the allegations of scientific misconduct and fraud as defined by the National Health and Medical Research Council and the Australian Vice-Chancellors Committee (NHMRC/AVCC) Joint Statement and Guidelines on Research Practice.⁵

June 2002

The UNSW announced the members of the external independent inquiry, who were: Sir Gerard Brennan, previous Chief Justice of the High Court (chair); Professor John Chalmers of the University of Sydney; Sir David Weatherall of Oxford University; and Professor Judith Whitworth of the Australian National University.⁶ Subsequently, it became known as the Brennan Inquiry.

January 2003

The UNSW received the final report of the Brennan Inquiry, after which the Hall Affair proceeded along two pathways: (a) matters related to the release of the Brennan Inquiry report; and (b) processes required to comply with the University Enterprise Agreement in dealing with allegations of research misconduct. Events were as follows:

(a) On 14 February 2003, the UNSW Council resolved not to release the Brennan Inquiry report, and also considered a submission by Professor Hall as to why its release should not occur. Ten days later, the Council reversed its position and sanctioned limited release. The following day (24 February), lawyers for Hall obtained a temporary injunction against its release. In August 2003, Justice McLennan lifted the injunction.⁷

(b) To satisfy the provisions of the UNSW Enterprise Agreement for pursuing alleged research misconduct, the Brennan Report was referred to Professor Stephen Deane, Professor of Surgery at Liverpool Hospital, acting as Hall's academic supervisor at Liverpool Hospital. The UNSW Enterprise Agreement sets out a detailed process to be followed in cases of alleged research misconduct, so that the UNSW may only discipline an academic if the Enterprise Agreement process has been complied with. Professor Deane's remit was to determine whether the Brennan Inquiry report gave rise to any allegations of misconduct or serious misconduct as defined by the Enterprise Agreement and, if so, whether such allegations could be “resolved through guidance, counselling, conciliation or other appropriate action.”⁸ Professor Deane provided a report (the Deane Report) on 17 March to UNSW Deputy Vice-Chancellor, Professor Mark Wainwright. Based on the Deane and the Brennan Inquiry reports, Professor Wainwright identified 12 outstanding allegations against Hall which warranted further investigation. Professor Hall was given the opportunity to respond to these allegations. Ultimately, Professor Wainwright determined that, in relation to

six allegations, there was no misconduct or serious misconduct. However, for the remaining six he was unable to determine whether or not serious misconduct had occurred. Hall was notified of these allegations, which he denied, but he elected to have the matter referred directly to the Vice-Chancellor.

6 October 2003

An ABC *Four Corners* program presents the central concerns and provides real-life insights into the key players in the Hall Affair.⁹

23 December 2003

UNSW releases the report by the Vice Chancellor, Rory Hume, on findings of allegations of misconduct.⁸ In reaching his decision, Hume considered the Brennan Inquiry report and the views of two experts, along with a written response from Hall, which included reports by six experts in immunology. Professor Hume considered the allegations only in the terms of the Enterprise Agreement and, where indicated, the NHMRC/ACVV statement and guidelines.⁵ His findings are shown below.

Allegation 1: A paper that was submitted or authorised to be submitted contained data and statements for which there were no supporting experiments.

Finding: Professor Hall was not guilty under the Enterprise Agreement. Rather he had committed an error of omission reflecting the pressure of mitigating circumstances.*

Allegation 2: A grant application by Professor Hall contained a figure with a conclusion “all differences are significant at $P < 0.05$ ”, but omitted relevant facts.

Finding: Guilty of misconduct, but, given the mitigating circumstances* and the Vice-Chancellor's belief that grant proposals are preliminary data yet to be validated and that there was no intention to deliberately deceive, he deemed the transgression to be minor and warranting no further action.

Allegation 3: A grant application by Professor Hall contained a statement when no experiments to support the statement were ever done in Hall's laboratory or in the laboratory of any other author of the grant application.

Finding: Guilty of misconduct despite the mitigating circumstances.* Hall was censured.

Allegation 4: Failure to notify the granting body of the details once the absence of the experiments outlined in Allegation 3 became apparent.

Finding: Guilty of misconduct warranting censure. However, Professor Hall's lack of action did not demonstrate an intention to deceive.

Allegation 5: The publication of an abstract which contained a statement for which no experiments were performed in Hall's laboratory.

Finding: Guilty of misconduct in failing to take reasonable steps to ensure that the abstract was accurate, but, in view of mitigating circumstances,* including the Vice-Chancellor's view that “abstracts have very little potential to damage the fabric of science,” along with the premise that individuals' interpretations of the abstracts differ, no further action was taken.

Allegation 6: That Professor Hall must accept the main responsibility for allowing a substantial degree of procedural laxity in his laboratory at Liverpool Hospital. Here, there were mitigating circumstances* against a background of a complex research laboratory and Hall's need to supervise a busy clinical service and a teaching program.

Finding: Guilty of misconduct. Hall was advised of his error of judgement, but, given the circumstances, no further action was taken.

In summary, the Vice-Chancellor did not believe that Professor Hall was guilty of scientific misconduct. Rather, he committed errors of judgement sufficiently serious in two instances to warrant censure. None of the Vice-Chancellor's findings warranted Hall's dismissal.

With the release of the Vice-Chancellor's findings, one prominent immunologist was quoted as saying that the allegations against Hall were “much ado about nothing”.¹⁰

* During the period when some of the alleged misconduct occurred, Hall was afflicted by a debilitating illness, his laptop and disks containing grant proposals were stolen, and he was subject to the pressure of tight deadlines.

Inquiry, yet not consulting its panel. Why bother with an external inquiry if its outcomes are to be subsequently interpreted and judged by an individual calling on his own wisdom along with the views of another battery of experts? Such action may be in accordance with and required by the UNSW enterprise agreement, but surely the integrity of research transcends any industrial agreement! Herein lies lesson number five — *universities, research institutions, research societies, societies and funding bodies need to collectively define uniform processes and procedures for addressing and adjudicating on scientific research and fraud.*¹⁵

But what about treatment? The emphasis in healthcare today has shifted from the management of diseases to their prevention, and herein lies lesson number six — *there is a need to shift the emphasis from managing scientific misconduct and fraud to preventing them.* This shift is thoroughly summarised in the recent report of the United States Institute of Medicine (IOM), *Integrity in scientific research: creating an environment that promotes responsible conduct.*¹⁶ Its central theme is the need to foster responsible research conduct, and it identifies the individual scientist as the most unpredictable variable in the equation. But it also throws back to institutions the responsibility of creating a culture that values research integrity through comprehensive and effective education, self-assessment and self-improvement, aimed at both the individual and the institutional level.

In short, the IOM report moves the prevention of research misconduct from focusing on *what we should do* in the conduct of research, as prescribed in guidelines, codes of conduct and other affirmations or declarations, to determining *what we actually do* through individual and institutional self-assessment, and *moving to best practice* through education and continuous improvement underpinned by a reward system. The IOM report lists desirable goals for both individuals and institutions in maintaining scientific integrity, but, ultimately, research is an intense and complex human exercise — one which sees young investigators and their mentors working in a “pressure-cooker” environment, where the only safety valves are open communication, mutual respect and mentors prepared to be actively involved.

In his 1982 Presidential Address to the American Society for Clinical Investigation, Phillip Majerus (Professor of Medicine, Biochemistry, and Molecular Biophysics at Washington University, and past editor of the *Journal of Clinical Investigation*) describes this ideal environment: “Students, postdoctoral fellows and junior colleagues are the future of medical research. They are our most valuable resource and should be treated as such. Senior investigators have a solemn responsibility to guide trainees to allow them to express their full potential. If because of clinical, administrative or other constraints, an investigator does not have time to participate in the ongoing progress of an investigation on a *day-to-day basis*, then he should dissociate himself from it. . . Work in progress should be discussed openly and the data should be reviewed, frequently, not just by the laboratory chief but also by disinterested parties. Group meetings of large laboratories where there is evaluation of data of individuals are important. Even better are presenta-

tions to departmental or other groups, where investigators not directly connected with the work, evaluate the data. These exercises require heavy applications of skepticism, the most important ingredient in scientific creativity.”¹⁷

Good advice then and good advice now.

The Hall affair has wreaked untold havoc, but, despite this, can be viewed in a detached, scientific sense as experiments in processes and procedures. The results of experiments need to be mulled over and interpreted to determine future directions. In this vein, the Hall affair should make a contribution to the pursuit of research integrity.

Ultimately, integrity in research requires leadership. If, in the wake of the Hall affair, our universities cannot ensure an enlightened and responsible ethos in their research enterprises they risk a loss of public confidence. The ball is in their court.

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