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# Responses to Academic Misconduct: Japan vs. the US

*by Aldric Hama*

Like virtually all academic disciplines in the United States over the past two decades, biomedical research has struggled to maintain research standards and to ferret out academic dishonesty. As with other disciplines, biomedicine has relied on a system of peer review to determine if research has been held to the highest scientific standards. While peer review has been relatively effective at maintaining consistency in methods, it is not a tool well-designed to detect fraud, plagiarism, and other kinds of behavior that corrupts research findings. Indeed, the spectacular array of flotsam that regularly evades the peer review system demonstrates that this goal is rarely achieved.[1] A top-ranking science journal, *Nature*, has even despaired that "peer review is not designed to identify potential misconduct."[2]

It is possible that peer review is being asked to do too much. Academics, busy with meeting the publication criteria for tenure and promotion are incentivized to skim and take shortcuts when reviewing intricate and lengthy research being produced by fellow scholars. For their part, the prestige journals, such as *Nature*, are incentivized to showcase only the "next big thing," or research that promises to be the "hot," trendy, or "game-changing" topics.

For their forays into the hot and trendy, authors are richly rewarded with larger research grants, tenure in prestigious academic institutions, and celebrity status—the "next Nobel Laureate." It is a system which finds too many academics willing to do whatever it takes, including shortcuts, to rise to the top of the heap and grab the brass ring.

This system of perverse incentives in scholarship production and integrity is global. Individual Japanese academics, for example, seem at least as zealous as their Western counterparts in seeking publication and the willingness to skirt research standards. A recent online tool called Retraction Watch, which inves-

tigates and documents academic misconduct by highlighting retractions of peer-reviewed scientific publications,[3] allows investigators to see that different countries take different approaches to policing violations of biomedical research standards. Specifically, a recent episode of academic misconduct—"fabrication, falsification or plagiarism in proposing, performing, or reviewing research, or in reporting research results"[4]—allows investigators to see that institutions in Japan appear to take violations of research protocol far more seriously than at least one major institution in the United States.

In Retraction Watch's current list of academics with the most retracted papers, five out of the top ten are Japanese.[5] With respect to the five Japanese researchers on the list, after (lengthy) investigations by their respective professional organizations and academic institutions, most of the offending publications were retracted. Furthermore, of the five authors, three were dismissed from their institutions—one apparently committed suicide—and the outcome for the remaining author has yet to be reported. Save for one case, while retraction and subsequent punishment took months to years, it was inevitable.

By contrast, punitive measures by U.S. institutions for scamming American taxpayers and damaging trust in these institutions seem few and far between. Recent events underline this point. Harvard Medical School (HMS) affiliated institutions have had a long and expensive history of misconduct allegations, yet individual academics generally emerged unscathed.[6]

In January of 2024, a range of papers spanning the past two decades originating from HMS-affiliated Dana Faber Cancer Institute (DFCI) were called out for alleged forgery. Authors have included high ranking DFCI executives, including President and CEO Laurie H. Glimcher, Executive Vice President and Chief Operating Officer William C. Hahn, and Senior Vice President for Experimental Medicine Irene M. Ghobrial.[7] Within about four weeks, DFCI's research integrity officer Barrett Rollins requested six papers be retracted and sought corrections for thirty-one papers out of a total of fifty-eight papers identified as having "errors or manipulated data."[8] Rollins stated, "Our experience is that errors are often unintentional and do not rise to the level of misconduct."[9] It should be noted that Rollins is a co-author of two of the fifty-eight publications.

In February, allegations of "data falsification" arose in papers authored by Khalid Shah, Vice Chair of Research in the Department of Neurosurgery and Director of the Center for Stem Cell and Translational Immunotherapy at Brigham and Women's Hospital.[10] Shah submitted corrections for some of these papers and the journals dutifully accepted and posted the corrections in July.[11] Instances of more egregious forms of misconduct, such as using photomicrographs from another publication without attribution and from the web-

site of a supplier of scientific equipment and chemicals, have yet to be addressed.

All of the professors at HMS-affiliated institutes appear to have retained their positions.

## Japan's RIKEN

In 2008, graduate student Haruko Obokata arrived at Charles Vacanti's laboratory. Vacanti at the time was Chairman of the Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital (a Harvard Medical School associated hospital). Vacanti and Obokata developed a simple method to induce adult cells to become stem cells (stimulus-triggered acquisition of pluripotency (STAP)).[12] After obtaining her doctorate from Waseda University in 2011, Obokata continued her work on STAP stem cells as a visiting researcher at the Center for Developmental Biology (CDB), RIKEN (a national research institute in Japan). In 2013, she became unit leader, heading her own laboratory, the Laboratory for Cellular Reprogramming, CDB, RIKEN. Internationally acclaimed RIKEN is Japan's largest government-funded research institute.

In January 30, 2014, *Nature* published Obokata's findings (in two separate articles) that described the creation of stimulus-triggered acquisition of pluripotency (STAP) cells from adult mammalian cells.[13] Standard methods at the time to turn undifferentiated cells into, for example, neurons, required the use of ethically contentious embryos, or complicated, low- yielding genetic engineering in adult cells. The "revolutionary" Obokata and Vacanti method was to immerse cells in low pH for 30 minutes. Using this method, plenty of viable embryonic-type cells could be made from readily obtainable adult tissues, which could be further transformed into specific cell types and used in treating tissue injuries and intractable diseases such as Alzheimer's disease. The then thirty-year-old Obokata was dubbed by a fawning media the next Nobel Laureate. To feminists, she was a role model.[14]

Within days of publication, scientists around the world reported that they were unable to replicate Obokata's and Vacanti's "presto"[15] method. Others pointed to plagiarism and image manipulation in her *Nature* papers. In mid-February, someone within RIKEN who had concerns about Obokata's papers contacted the internal Office of Auditing and Compliance, which initiated an investigation. At the end of March, RIKEN concluded that Obokata committed misconduct while procuring her *Nature* data. In the beginning of July, *Nature* retracted her publications.

Had Obokata left Japan after obtaining her Ph.D. to start a career in the U.S., perhaps she could have lived in quiet obscurity as just another researcher or professor. Instead, Obokata's case illustrates marked differences between the U.S. and Japan in response to academic misconduct.

## RIKEN vs. Harvard

The primary difference between Japan and the U.S. was institutional. RIKEN made its interim March 13, 2024 and final misconduct report public. Following this, RIKEN elaborated to the public (in both English and Japanese) what it planned to do next, including punitive measures.[16] Obokata's supervisors, and co-authors, came under attack. A March 31 report stated that while Obokata produced the data for her *Nature* papers, her supervisors bore a "heavy responsibility" for not only neglecting to check the accuracy and validity of the data but for poorly supervising Obokata as well.

In May, RIKEN "instructed" Obokata to retract one of her *Nature* papers. In June, an external advisory board recommended dismantling the CDB—five months later, the CDB and its staff were divided and folded into other RIKEN institutes. In August, following about a month of hospitalization for depression, co-author and CDB Deputy Director Yoshiki Sasai hanged himself at RIKEN. In a note he left behind, Sasai chided the media for its "unjust bashing" which left him in a state of depression.[17] In another note, he encouraged Obokata to persevere with her STAP stem cells.[18]

With the dismantling of the CDB in November, Obokata was demoted to research scientist and placed in the Office of the Prevention of Research Misconduct, where her task, under close supervision, was to replicate her *Nature* findings. She resigned from RIKEN the following month.

In February 2015, RIKEN announced disciplinary measures against four RIKEN staff. The head of the CDB, which was shut down the previous November, Masatoshi Takeichi, had left RIKEN. While not a co-author on Obokata's papers, RIKEN hit Takeichi with a reprimand. As a sign of contrition that he bore a "heavy responsibility" as former head of the CDB, he "voluntarily" returned "10% of 3 months' worth of salary."[19]

A co-author, Teruhiko Wakayama, received a "suspension from work" from RIKEN, although he had already left RIKEN in 2012 for a faculty position at the University of Yamanashi. A co-author on both of Obokata's papers, who was still employed by RIKEN, was reprimanded. Obokata was officially dismissed. Furthermore, RIKEN considered suing Obokata for the money spent on STAP stem cell experiments.[20]

In October 2014, Waseda University, following an internal investigation, informed Obokata that it will void her thesis and, thus, her doctorate unless she addressed specific problems with her thesis, including plagiarism. She was given one year to correct deficiencies. After failing to submit a revision, Waseda University revoked her doctorate in November 2015.[21]

The STAP stem cell controversy in Japan set off waves upon waves of activity at RIKEN as well as in the Japanese media. By contrast, the controversy barely evoked a ripple in the U.S.

For example, Charles Vacanti was listed as a co-author on the retracted *Nature* papers (his brother Martin was also a co-author on one of them), but there was no equivalent aggressive U.S. media coverage of Vacanti or public reprimand by his HMS-affiliated institution. Before retraction of the *Nature* papers, Vacanti stated to a reporter, "I believe over time the science will speak for itself."[22]

Whether there was an investigation at Vacanti's institution or HMS for alleged misconduct will never be known. According to HMS and U.S. government guidelines, misconduct allegation investigations are confidential.[23] While lacking in transparency, this would ostensibly shield the accused from a reputational hit pending the outcome of the investigation. Because federal funds were not used in either *Nature* paper experiments, there was no reason to drag the U.S. government (i.e. the NIH Office of Research Integrity) into the STAP stem cell controversy.

In August 2014, Charles Vacanti went on a one-year sabbatical[24] and then resigned from Brigham and Women's Hospital the following year, without mentioning the STAP stem cells.

The lag between publication of Obokata's papers and their retraction was six months. The DFCI papers tagged by integrity officer Barrett Rollins in January of 2024 sat in the scientific literature for years until a blogger cast suspicion on the data at the beginning of January this year. As of July, none of the authors at DFCI have resigned and the results of an internal investigation, if any, have not been announced. Perhaps the alleged instances of alleged misconduct at DFCI did not rise to the level of actual misconduct and have been dismissed. Even if a misconduct "verdict" is obtained, it is unlikely that anyone at an HMS-affiliated institution will be fired, lose their Ph.D. (or, in the case of some authors, their medical license), voluntarily return a part of their salaries, or have their entire department shuttered, much less make the ultimate sacrifice.

Institutions reflect their culture and their people, and vice versa.[25] It isn't clear whether the Japanese institutional response in Obokata was the right one, or whether the more lenient approach of U.S. institutions is more effective in curbing academic misbehavior. Only time and sufficient evidence will allow for a reasonable verdict on academic misconduct policies. But the prevailing wisdom in the U.S. seems to be summed up by the comments of Professor of the History of Science Nicholas Steneck: "The problems flagged by the [RIKEN] committee such as lack of oversight and poor data management, are frequent in the United States and elsewhere," but that "faulting an institution for them is problematic."[26]

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**Aldric Hama** *last appeared in AQ with his "Getting German Colonialism Right," a review of Bruce Gilley's* In Defense of German Colonialism *(2022).*

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