

## ***The Relative Efficiency of Research Misconduct Investigations Involving Personal Injury vs. Injury to the Scientific Record***

Andrew J. Hogan, Department of Medicine, Michigan State University , USA

Ronald J. Patterson, Department of Microbiology and Molecular Genetics, Michigan State University, USA

Robert L. Sprague, Department of Kinesiology , University of Illinois-Urbana/Champaign, USA

**Keywords:** *Efficiency, Research misconduct, Type of injury*

Research misconduct investigations conducted by universities and other research institutions are sometimes highly contentious affairs whose findings are disputed both internally and externally. The central question of the research reported in this paper is whether certain features of the typical internal research misconduct investigation contribute to the likelihood of closure or to continued contention.

Most research misconduct investigations undertaken in institutions that receive Federal research contracts and grants follow the investigational model proposed by the National Institutes of Health (NIH), described here as the tribunal model. In civil law, similar types of disputes (civil fraud, misappropriation of property, etc.) are dealt with in adversarial proceedings. One measure of the efficiency of the typical model for conducting a research misconduct investigation is to determine how often that model produces a definitive finding, or alternatively how often it leads to further proceedings.

The objective of this study was to test whether the presence of personal injury associated with a research misconduct allegation influences the likelihood of a post-investigation proceeding (lawsuit, grievance, legislative hearing, administrative inquiry, etc.), in the context of the use of the tribunal model of investigation. We hypothesized that the standard tribunal model, which was designed principally to protect the integrity of the scientific record, might not be very efficient in addressing misconduct allegations in which a personal injury was the central feature.

### **Materials and Methods**

*Data.* Cases were identified in the files of Dr. Robert Sprague of the University of Illinois-Urbana/Champaign, which contain 1,100 references on the 231 research misconduct cases (hereafter referred to as the “Sprague files”). The Sprague files consist primarily of copies of news stories in scientific journals, such as *Science* and *Nature*, or academic trade journals, such as the *Chronicle of Higher Education* and *Lingua Franca*.

Sixty-three cases were identified as having adequate documentation of alleged misconduct

involving either a personal injury or an injury to the scientific record. A personal injury case was one in which a person directly involved in the misconduct allegation identified some kind of personal loss, usually misappropriation of intellectual property—plagiarism or the unauthorized use of confidential information from grants or articles under peer review. A scientific record case was one involving some form of contamination of the scientific record. Scientific record cases usually involved falsification/fabrication, but sometimes involved misappropriation of the intellectual property of non-parties to the allegation.

Post-investigation proceedings included grievances filed within the institutions, lawsuits, complaints to regulatory or funding agencies, and requests to legislative or administrative bodies. A post-investigation proceeding was classified as a due process case if one or more of the parties raised due process issues (hearing notification, right to call or cross-examine witnesses, impartial decision-makers, etc.) related to the research misconduct investigation.

In the tribunal model of a research misconduct investigation, an individual files an allegation with an institution, and the institution forms a panel to investigate the allegation. The panel is responsible to gather evidence, call and examine witnesses, and make a finding; in common parlance, the tribunal is prosecutor, judge and jury. The standard NIH-tribunal model often attenuates some due process rights commonly found in adversarial proceedings, in particular rights to call or cross-examine witnesses and to present evidence. Current NIH policy suggests that the complainant in such an investigation be treated as a witness, rather than as a party.

In an adversarial proceeding, one party (complainant) accuses the other party (respondent) of misconduct. The parties gather and present evidence, call and examine and cross-examine witnesses. The institution provides an adjudicator to process the allegation, hold hearings and render a decision. We were able to identify no unambiguous cases in which the adversarial model was employed in a research misconduct investigation.

*Data Collection and Reliability.* We reviewed 221 documents related to the 63 identified cases. For each document, a form was completed (see Appendix A) identifying the case name and the document number in the Sprague

files. The abstractor (Hogan or Patterson) identified the type of misconduct alleged (fabrication/falsification, misappropriation of intellectual property, other serious deviations, retaliation, or other). The abstractor then determined the nature of injury based on whether there was an injured party known to the individual alleged to have committed misconduct; if so, the case was classified as one involving personal injury, otherwise as injury to the scientific record. Next the abstractor coded for the type of institutional investigation (tribunal or adversarial), based principally on whether the complainant was a witness or a prosecutor.

The abstractor then determined whether there were other proceedings consequent to the institutional research misconduct investigation, such as:

- Internal grievances, discrimination complaints, etc.
- Lawsuits, complaints/appeals to administrative agencies, complaints/appeals to legislative bodies.

In those cases where there was some sort of post-investigation proceeding, the abstractor determined whether due process issues were raised.

Finally, the abstractor examined each document regarding the role of the institutional legal counsel as being supportive, neutral, or obstructive of the procedural fairness of the institutional investigation. The abstractor looked for any references to the role of institutional legal counsel regarding the selecting or preparing witnesses, selecting or preparing panelists, selecting or preparing administrators, handling administrative problems/complaints, issues of attorney-client privilege, providing or withholding information, applying legal indemnification, deliberating or making findings, the preparing or editing of reports, the protecting of parties' due process rights.

To assure the reliability of the abstraction process, the first 20 cases were reviewed by both abstractors to establish interrater reliability using a data collection tool. Review of the reliability of the initial cases indicated a 94 percent agreement on which documents were relevant to each case, a 70 percent agreement regarding the type of misconduct, and a 91 percent agreement on whether the injury was personal or to the scientific record. There was a 60 percent agreement on which documents indicated the

type of institutional investigation, but 100 percent agreement on the type of institutional investigation. There was also 100 percent agreement regarding the existence of post-investigation proceedings. The reasons for the discrepancies in the classification of misconduct allegations were discussed and resolved before finishing the abstraction of the remaining cases.

### Results

No unambiguous cases where the original research misconduct investigation was administered using the adversarial model were found. All of the results related to research misconduct investigations which were conducted under the standard tribunal model.

Of the 63 cases described in the 221 documents reviewed, 41 percent of cases resulted in a post-investigation proceeding, and 69 percent of these involved a due process issue. Of the 63 cases, 41 percent of cases involved personal injury, and 70 percent of personal injury cases resulted in a post-investigation proceeding. Of the personal injury cases resulting in a post-investigation proceeding, 61 percent of these proceedings involved a due process issue.

Ten percent of the 63 cases involved some controversy regarding the role of the institutional attorney. Although we looked for instances where the role of the institutional attorney was supportive of procedural fairness, only negative statements appeared in the literature examined. Twenty-one percent of cases arose in the context of a funded grant.

Multivariate logistic regression analysis was performed to determine the likelihood of post-investigation proceedings. The results are presented in Table 1. Personal injury cases are at least 10 times more likely to result in a post-investigation proceeding than cases involving injury to the scientific record. When allegations are made in the context of a funded grant, the likelihood of a post-investigation proceeding is reduced, although this effect is only marginally

Parameter	Odds Ratio	95% Bounds	
		Upper	Lower
Personal injury	10.34**	36.46	2.94
Attorney controversy	3.71	33.39	0.41
Grant context	0.22*	1.12	0.04

Table 1. Logistic Regression Analysis: Likelihood of Post-Investigation Proceeding.  $n=63$ , \*\* =  $p < 0.05$ ; \* =  $p < 0.10$

statistically significant.

In the subset of cases where due process issues were raised, any controversies regarding the role of the institutional attorney in the research misconduct case tended to increase the likelihood of a post-investigation proceeding by more than six-fold (see Table 2). However, this result was only marginally statistically significant.

Parameter	Odds Ratio	95% Bounds	
		Upper	Lower
Personal Injury	3.39**	11.28	1.028
Attorney controversy	6.50*	46.16	0.92
Grant Context	0.35	1.88	0.07

Table 2. Logistic Regression Analysis: Likelihood of Post-Investigation Proceeding Involving Due Process.  $n=63$  / \*\* =  $p < 0.05$  / \* =  $p < 0.10$

### Conclusions

Because we were able to identify only two ambiguous cases of research misconduct investigations possibly employing an adversarial model, we were not able to determine whether the adversarial model would result in fewer post-investigation proceedings than the tribunal model arising out of misconduct investigations involving personal injury.

Under the standard tribunal approach to research misconduct investigations, cases involving personal injury are much more likely to produce a post-investigation proceeding. We speculate that the tribunal approach frustrates the ability of personally injured complainants to seek redress. From the lofty perspective of protecting the integrity of the scientific record, personal injury cases may often appear trivial or unimportant and clouded by interpersonal bickering that borders on the unprofessional.

Very often personal injury cases involved intellectual misappropriation disputes between students or junior faculty and senior faculty members. In such cases, the administrators and the members of the tribunal conducting the investigation tend to be more the peers of the respondent than the complainant. Complainants, rightly or wrongly, often believe that the investigation is biased toward the respondent and that the tribunal procedures prevent them from making the most effective cases against the respondent.

ORI's recent policy statement about treating whistleblowers as witnesses will probably increase the likelihood of a post-investigation proceeding by giving complainants even less standing than they previously held.

In some cases the external funder offers a post-investigation appeals process including a full due process hearing, for example, the Departmental Appeals Board of the Department of Health and Human Services. The existence of this appeal mechanism may alter the conduct of the original investigation, leading to fewer post-investigation proceedings. The existence of an external appeal mechanism may discourage some institutions that might be tempted to bias a research misconduct investigation toward an outcome most favorable to the institution's reputation or financial interests; the possibility of disclosure and/or reversal at an appeals hearing could act as a check on such institutional behavior.

Institutional attorneys may face conflicts of interest when fair treatment of the parties to an investigation is not perceived to be in the institution's interest. Legal representation of an organization presents many potential ethical pitfalls for attorneys, especially when conflicts arise within an organization, as is the case when a university must investigate a research misconduct allegation against a faculty member or student.

While most judges are attorneys, most attorneys are not judges and most attorneys are trained to act as advocates for their clients. Some institutional attorneys may see their roles as advocates for procedural fairness, but they also understand that a finding of misconduct can carry heavy financial and reputational consequences for the university as well as the individual respondent.

Moreover, any of the parties to a misconduct investigation could become a potential litigant against the university because of decisions made during the case by university administrators. Therefore there may be a strong tendency to act as legal advisor to university administrators as opposed to advocates for a fair and impartial investigation.

In this research, it is difficult to determine whether controversial actions by institutional attorneys was a cause or consequence of post-investigation proceedings, since the timelines necessary to distinguish cause from effect are often missing in the kinds of documents

reviewed. Also the frequency of such reports are low, but this could arise from the confidentiality of attorney-client communications as well as from lack of incidents to report.

*Caveats.* Most reports of research misconduct are from news stories in scientific or trade magazines (*Science, Nature, Chronicle of Higher Education*). Reliance on these sources could introduce a possible reporting bias, since only the most disputatious cases would be considered news worthy. This reporting bias could significantly affect the prevalence data presented earlier, but probably would not have a major effect on the results of the multivariate analysis.

NIH/ORI reports on the outcomes of research misconduct investigations were also a major source of cases. NIH/ORI reports also contain relatively few plagiarism/ownership cases, which might tend to underestimate the number of personal injury cases.

Some observers believe that the handling of research misconduct cases has improved over time. The results of this study found a slight and statistically insignificant temporal decline in the number of cases resulting in post-investigation proceedings. However, this decline was confounded by a concurrent decline in the number of cases reported over time. Because the cases presented here were identified from the scientific news literature, this latter decline could be a function of either fewer cases (better management) or less reporting (declining newsworthiness) or both. A separate study based on a fixed baseline of research misconduct allegations in the institutions in which they arose has been proposed to disentangle these confounded effects.

### Case References (Reference Identifier in Sprague Database, citation)

- 5310. Marshall E. EPA faults classic lead poisoning study. *Science* 1983; 222: 906-7.
- 6411. Weissman v. Freeman. D. New York 1989 Feb 23; Nos. 225, 353.
- 6438. Investigations, S. o. O. a. Fraud in NIH grant programs. 1988.
- 6439. Crewdson J. *Science* on the hot seat. *Chicago Tribune* 1989 Mar 19; Sect. 5, 9, 13.
- 6483. Dakins D. Copyright lawsuit illuminates debate over academic standards. *Diagnostic Imaging* 1989 May; 54-60.

6484. Mervis J. Bitter suit over research work asks "Who deserves the credit?". *The Scientist* 1989; 1, 4.
6486. Blum D. Yeshiva professor wins copyright lawsuit. *Chronicle of Higher Education* 1989 Apr 5; A14.
6494. Raymond C. Institutes of Health find that Purdue professor plagiarized experiments. *Chronicle of Higher Education* 1989 Jul 12; A2.
6496. Marshall E. USGS reports a fraud. *Science* 1989; 244: 1436.
6512. Barinaga M. NIMH assigns blame for tainted studies. *Science* 1989; 245: 812.
6519. Gupta's defense. *Science* 1989; 245: 1192.
6521. Erben H. Carelessness, or good faith? *Science* 1989; 245: 1165-6.
6523. Coughlin EK. Geologist accused of misidentifying fossils calls charges 'misleading'. *Chronicle of Higher Education* 1989 Sep 13; A9.
6532. Raymond C. Allegations of plagiarism of scientific manuscript raise concerns about 'intellectual theft.'. *Chronicle of Higher Education* 1989 Jul 19; A4, A7.
6551. Water T, Oliwenstein L. *Science* duds. Discover 1990: 42-44.
6565. Zurer P. NIH panel strips research of funding after plagiarism review. *Chemical & Engineering News* 1989; 24-5.
6603. Greenberg DS. Squalor in academe Plagiarist gets promoted, victim is out of her job. *Science & Government* 1990, May 1; 1, 5-7. Gualtieri, C. T. "Letters."
6622. Henderson J. When scientists fake it. *American Way* 1990; 56-62, 100-1.
6623. Heidi S. Weissmann v. Leonard M. Freeman. 684 Fed Sup: 1248.
6629. Kaplan, R.J. (1989). Letter.
6636. Scandal upon scandal. *Nature* 1990; 343: 396.
6661. Gordon G. Lab aide sues U-M, ex boss. *Detroit News* 1990 May 6: 1A, 9A.
6689. Culliton BJ. NIH misconduct probes draw legal complaints. *Science* 1990; 249: 240-2.
6728. Hamilton DP. NIH sued over misconduct case. *Science* 1990; 249: 471.
6738. Twedt S. Federal study raps Pitt medical school. *The Pittsburgh Press* 1990 Sep 9: Sect. A:1,7.
6744. Hallum J, Hadley S. NIH Office of Scientific Integrity: Policies and procedures (Letter to the Editor). *Science* 1990; 249: 1227-8.
6745. Weismer G. Orofacial impairment in Parkinson's disease (Letter to the Editor). *Neurology* 1990; 40: 191-3.
6747. Hamilton D. Science misconduct legalese thickens. *Science* 1990; 249: 1102.
6812. Bradshaw RA, Adler AJ, et al. Bridges committee procedures (Letter to the Editor). *Science* 1990; 250: 611.
6831. Pinney GW. 'Whistle-blowers' are encouraged to come forward at 'U,' dean says. *Minneapolis Star Tribune* 1990 Oct 9: 4B.
6832. FDA investigating doctor at 'U' who led drug study. *Minneapolis Star Tribune* 1990 Dec 9; 4B.
6842. Hamilton DP. NIH misconduct procedures derailed. *Science* 1991; 251: 152-3.
6874. Cordes C. Professor asserts Stanford lied to U.S. about misconduct probe. *Chronicle of Higher Education* 1991 Mar 13; A21, A24-A25.
6920. Hallum JV, Hadley SW. NIH misconduct procedures: Effect of new ruling (Letter to the Editor). *Science* 1991; 251: 1296.
6945. Even misconduct trials should be fair. *Nature* 1991; 350: 259-260.
6990. Rooney P. UI researcher steps down after admitting plagiarism. *News Gazette* 1991 Apr 11; A1, A10.
6991. Rooney P. Colleagues see pressure in plagiarism case. *News Gazette* 1991 Apr 12; A3. Ames, Rusell University of Illinois 19913
7057. London R. Judge strikes rules on scientific fraud inquiries. *New York Times* 1991 May 3; Section 2, 11.
7079. Weiss T. Too many scientists who 'blow the whistle' end up losing their jobs and careers. *Chronicle of Higher Education* 1991 Jun 26: A36.
7090. Monson N. Misconduct in the labs. *Health Watch* 1991: 24-33.
7097. Wheeler D. U.S. has barred grants to 6 scientists in past 2 years. *Chronicle of Higher Education* 1991; A1, A6-A7.
7216. Wiernik J. Suits charge plagiarism in research. *Ann Arbor News* 1991 Sep 18; B1- B2.
7279. Woolf P. Fraud in science: How much, how serious? 1989 *Hastings Center Report* 11, No. 5: 9-14.
7284. Blakely E, Poling A, et al. *Fraud, fakery, and fudging.* : 313-330.
7327. Rennie D. The Cantekin affair. *JAMA* 1991; 266: 3333-7.
7328. Winslow R. Earache studies lead to painful dispute. *Wall Street Journal* 1991 Dec 18; B1, B3.
7329. Lead researcher under investigation. *Science* 1991; 254: 1575.
7486. Ernhart CB, Scarr S. Lead challenge (Letter to the Editor). *Science* 1992; 255: 783.
7501. Moore JA. Cases of misconduct related to speech and hearing science. Paper for HSS 1991; 494/Psych 493.
7551. Roberts L. Misconduct: Caltech's trial by fire. *Science* 1991; 253: 1344-7.
7584. Wheeler DL. Scientists begin to question confidentially of fraud investigations. *Chronicle of Higher Education* 1992; A1, A8, A11.
7632. Woolf PK. Deception in scientific research. *Jurimetrics Journal* 1988; 29: 67-95.
7673. Adler T. Psychologists criticize study of low lead levels. *Monitor* 1992 Mar; 40-1.
7689. Woolf PK. Accountability and responsibility in research. *Journal of Business Ethics* 1991; 10: 595-600.
7757. Rigert J, Lerner M. 'U' researcher could face federal charge. *Star Tribune* 1992 Aug 22; 1A, 4A-1A, 5A.
8020. Anderson M. *Impostors in the temple.* New York: Simon & Schuster 1992.

8070. Rigert J, Lerner M. In courting industry, 'U' has invited trouble." *Minneapolis Star Tribune* 1992 Dec 31; 1A, 14A.
8186. Scarr S, Ernhart C. Of whistleblowers, investigators, and judges. *Ethics & Behavior* 1993; 3: 73-93.
8187. Ernhart CB, Scarr S. On being a whistleblower. *Ethics & Behavior*. 1993; 3: 199-206.
8197. Minnesota psychiatrist accused of fraud in study. *News Gazette* 1993 Feb 17: D-2.
8217. Rigert J. Top child psychiatrist at 'U' indicted on charges of fraud. *Minneapolis Star Tribune* 1993 Feb 17; 1A, 11A.
8218. Sweeney P. U professor faces charges on drug study irregularities. *Saint Paul Pioneer Press* 1993 Feb 17; 1A, 6A.
8259. Cordes C. Research project on ear infection dramatizes challenge of conflicts. *Chronicle of Higher Education* 1993 Mar 3: A23, A28.
8262. McCuen RH. Institutional oversight to enhance integrity in research. *Journal of Professional Issues in Engineering* 1990; 116: 27-37.
8298. Penn S. Misconduct in the modern university. *Thistle* 1992; 1, 7.
8299. Loh P. Vest sued for coverup of scientific misconduct. *Thistle* 1992; 1, 8-1,11.
8323. Zorza M. "Letter." 1993 May 10.
8419. Cotton P. Harassment linked to fraud, lawsuit alleges. *JAMA* 1992; 267: 783-784.
8439. Burd S. Shalala's criticism of U.S. polices on scientific misconduct troubles some lawmakers and watchdog groups. *Chronicle of Higher Education* 1993; A31, A34.
8478. Lueders B. Hunger strike feeds UW controversy. *Isthmus* 1993; 5, 7.
8479. Kerr S. Feds freeze fraud-finders A Wisconsin connection? *Shepherd Express* 1993 Jun 17-24;. 3.
8501. Leo A. Paquette, Ph.D., Ohio State University. *NIH Guide for Grants and Contracts* 1993; 2-3.
8502. James H. Freisheim, Ph.D., Medical College of Ohio. *NIH Guide for Grants and Contracts* 1993; 1-2.
8506. Mark M. Kowalski, M.D., Ph.D., Dana Farber Cancer Institute and Harvard University. *NIH Guide for Grants and Contracts* 1993; 2.
8523. Burd S. New policy of naming scientists who are found guilty of fraud renews debate on federal role. *Chronicle of Higher Education* 1993 Jun 30; A24, A25.
8549. Final findings of scientific misconduct. *NIH Guide for Grants and Contracts* 1993; 2-3.
8585. Holland E. Committee finds validity in allegations against Paquette. *On Campus* 1993 Aug 19.
8586. Lore D. OSU hunts core of plagiarism. *Columbus Dispatch* 1993 Aug 23; C1.
8587. Cleverley M. Chemistry professor has student support. *The Lantern* 1993 Aug 26.
8604. Polsby M. NIH spasmodic torticollis. Bethesda, MD: National Institutes of Health. 1993 Jul 30.
8606. Polsby M. "Letter." 1993 Aug 20.
8607. Rosen JE. "Letter." 1993 Jun 26.
8608. Rosen JE. Statement of Dr. Jane Rosen. Undated.
8609. McCutchen CW. "Letter." 1993 Aug 24.
8611. Rosen JE. "Letter." 1993 Aug 24.
8612. Rosen JE. "Letter." 1993 Aug 12.
8627. Taubes G. Fraud busters. *Review of Academic Life* 1993; 47-53.
8648. Grassley CE, Cohen WS. "Letter." 1993 Sep 23.
8791. Hilts PJ. U.S. scientist says superiors stole credit for her vaccine. *New York Times* 1993 Dec 18; 1010.
8841. Nimmons D. Sex and the brain. *Discover* 1994; 64-71.
8902. Butler K, Ohland G. Making the case against discrimination. *LA Weekly* 1991 Jan 18.
8915. Anderson D, Attrup L, Axelsen N, Riis P. *Scientific dishonesty & good scientific practice*. Copenhagen: Danish Medical Research Council 1992 .
9097. Lock S, Wells F, et al., Eds. *Fraud and misconduct in medical research*. 1993.
9185. Immunologist fined \$5,000 in lab misdeed. *New York Times* 1994 Aug 31; A16.
9186. Final findings of scientific misconduct. *NIH Guide for Grants and Contracts* 1994; 23: 2.
9417. Findings of scientific misconduct. *NIH Guide* 1995.
9542. Hilts PJ. A university and 4 scientists must pay for pilfered work. *New York Times* 1995 May 19; A20.
9568. Bauer HH. Ethics in science. [Internet] Discussion of Fraud in Science; 1995 May 1.
9603. Taubes G. Plagiarism suit wins: Experts hope it won't set a trend. *Science* 1995; 268: 1125.
9614. Herling J. Embarrassment in Hong Kong. *Chronicle of Higher Education* 1995 Mar 24; A43-A44.
9616. Parrish CJ. The Lumigen Project - or how Wayne State University went into business and lost its shirt and a lot more! *Newsbriefs* Wayne State University 1994 Sep 7;. 1-7.
9617. Shellum B. Chemical conspiracy. *Detroit Free Press* 1995 Apr 7; 1E-2E.
9618. Wilson M. Judge: WSU chemist stole major discovery. *The Detroit News* 1994 Aug 17; 1A, 6A.
9636. Lytton H. Frequency of FFP. [Internet] 1995 Jun 11.
9642. Kytte R. HHS release. [Internet] 1995 Jun 23.
9649. Holden C. More on genes and homosexuality. *Science* 1995; 268: 1571.
9654. Crewdson J. 'Gay gene' study comes under fire. *Chicago Tribune* 1995 Jun 25, 1, 6-1, 7.
9662. Benditt J. Conduct in science. *Science* 1995; 268: 1705-1718.
9684. Marshall E. NIH's "Gay gene" study questioned. *Science* 1995 Jun 30; 268: 1841.
9707. Findings of scientific misconduct. *NIH Guide* 1195; 24.
9720. Integrity, O. o. R. *Annual Report*. Department of Health and Human Services 1994 Sep.
9727. Researcher assessed damages for distribution of a cell line. *ORI Newsletter* 1994; 3: 1-2.
9739. Burd S. Nursing professor found guilty of scientific misconduct. *Chronicle of Higher Education* 1995 July 7; A27.
9757. Bivens LW. Findings of scientific misconduct. Office of Research Integrity. Notice 1993 June 21.

9784. Wilchek M. [Letter to the Editor]. *Science* 1995; 269: 1034.
9812. Office of Research Integrity, *Annual Report* 1994. 1995.
9826. Findings of scientific misconduct. *NIH Guide* 1995; 24, No. 33.
9854. Findings of scientific misconduct. *NIH Guide* 1995; 24, No. 34.
9890. ORI/AAAS Conference plagiarism and theft of ideas. 1993.
9959. Case summaries. *ORI Newsletter* 1996; 4, No. 2: 5.
9963. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 15.
9972. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 13.
9974. Miller JP. AIDS research scientific fraud. [Internet] 1996 Apr 30.
9975. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 13.
9976. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 10.
9983. Jayaraman KS. Court allows fossil fraudster to return. *Nature* 1996; 380: 570.
10003. Cherry M. Black scientist faces inquiry at South African university. *Nature* 378: 324.
10079. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 22.
10084. Alan L. Landag. *ORI Newsletter* 1995; 4, No. 1: 5.
10110. King RT. How a drug firm paid for University study, then undermined it. *Wall Street Journal* 1996 Apr 25.
10116. Jock F. MIT torn by bitter dispute over missile. *Science* 1996; 271: 1050-2.
10153. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 22.
10154. Findings of scientific misconduct. *NIH Guide* 1993; 25, No. 22.
10163. Gail L. Daubert. *ORI Newsletter* 1996; 4: 3-4.
10164. Jamal Z. Farooqui. *ORI Newsletter* 1996; 4: 4.
10165. Andrew Friedman. *ORI Newsletter* 1996; 4: 4-5.
10166. Joan Gans. *ORI Newsletter* 1996; 4: 5.
10212. Hiltz PJ. Dispute on gulf war missile continues to fester at MIT. *New York Times* 1996 Feb 24; 11.
10229. Zinberg D. A cautionary tale. *Science* 1996; 273: 411.
10260. Findings of scientific misconduct. *NIH Guide* 1996; 25, No. 27.
10358. Garber P. MCG looking at changes amid research investigation. *Augusta Chronicle* 1996, October 5.
10463. Rex D. International recruitment highlights need to track scientific behavior. *Nature* 1996, September 12; 383: 107-108.
10605. Vipin Kumar. *ORI Newsletter* 1996; 6-7.
10693. Findings of scientific misconduct. *NIH Guide* 1997; 26, No. 15. Findings of scientific misconduct. *NIH Guide* 1997, May 9; 26, No. 15.
10719. David F. Eierman. *ORI Newsletter* 1995; 3.
10724. Yahya Abdlahi. *ORI Newsletter* 1996; 5.
10772. Ann Marie Huelskamp, M.H.S. Johns Hopkins University School of Medicine. *ORI Newsletter* 1997; 5.
10789. Zalewski D. Do corporate dollars strangle scientific research? *Lingua Franca* 1997; 51-59q.
10802. Findings of scientific misconduct. *NIH Guide* 1997; 26, No. 22.
12345. Mazur A. The experience of universities in handling allegations of fraud or misconduct in research. Project on Scientific Fraud and Misconduct: Report on Workshop Two, AAAS 1989.

## Appendix A

### DATA COLLECTION SHEET FOR ORI ABSTRACT RESEARCH PROJECTS

CASE NAME \_\_\_\_\_ DOCUMENT NO. \_\_\_\_\_

TYPE OF MISCONDUCT ALLEGED:  
(check all that apply)

Fabrication/Falsification \_\_\_\_\_  
 Misappropriation of Intellectual Property \_\_\_\_\_  
 Other Serious Deviations \_\_\_\_\_  
 Retaliation \_\_\_\_\_  
 Other: \_\_\_\_\_

NATURE OF INJURY  
(Is there an injured party known to the alleged misconduct?)

Personal Injury \_\_\_\_\_ Injury to the Scientific Record \_\_\_\_\_

TYPE OF INSTITUTIONAL INVESTIGATION  
(Is the complainant a witness or a prosecutor?)

Tribunal \_\_\_\_\_ Adversarial \_\_\_\_\_

#### OTHER PROCEEDINGS CONSEQUENT TO THE INSTITUTIONAL INVESTIGATION

Internal (grievances, discrimination complaints, etc.) \_\_\_\_\_  
     If yes, was due process an issue? \_\_\_\_\_  
 External:Lawsuits \_\_\_\_\_  
     If yes, was due process an issue? \_\_\_\_\_  
     Complaints/Appeals to administrative agencies \_\_\_\_\_  
     If yes, was due process an issue? \_\_\_\_\_  
     Complaints/Appeals to legislative bodies \_\_\_\_\_  
     If yes, was due process an issue? \_\_\_\_\_

#### ROLE OF INSTITUTIONAL LEGAL COUNSEL

As regards the following, was there any evidence as regards the role of institutional legal counsel as being (S)upportive, (N)eutral, (O)bstructive or (U)nknown of the procedural fairness of the institutional investigation? (circle one in each line)

Selection or preparation of witnesses:	S	N	O	U
Selection or preparation of panelists:	S	N	O	U
Selection or preparation of administrators:	S	N	O	U
Handling administrative problems/complaints:	S	N	O	U
Issues of attorney-client privilege:	S	N	O	U
Providing or withholding information:	S	N	O	U
Application of legal indemnification:	S	N	O	U
Deliberation or making findings:	S	N	O	U
Preparation or editing of reports:	S	N	O	U
Protection of parties' due process rights:	S	N	O	U