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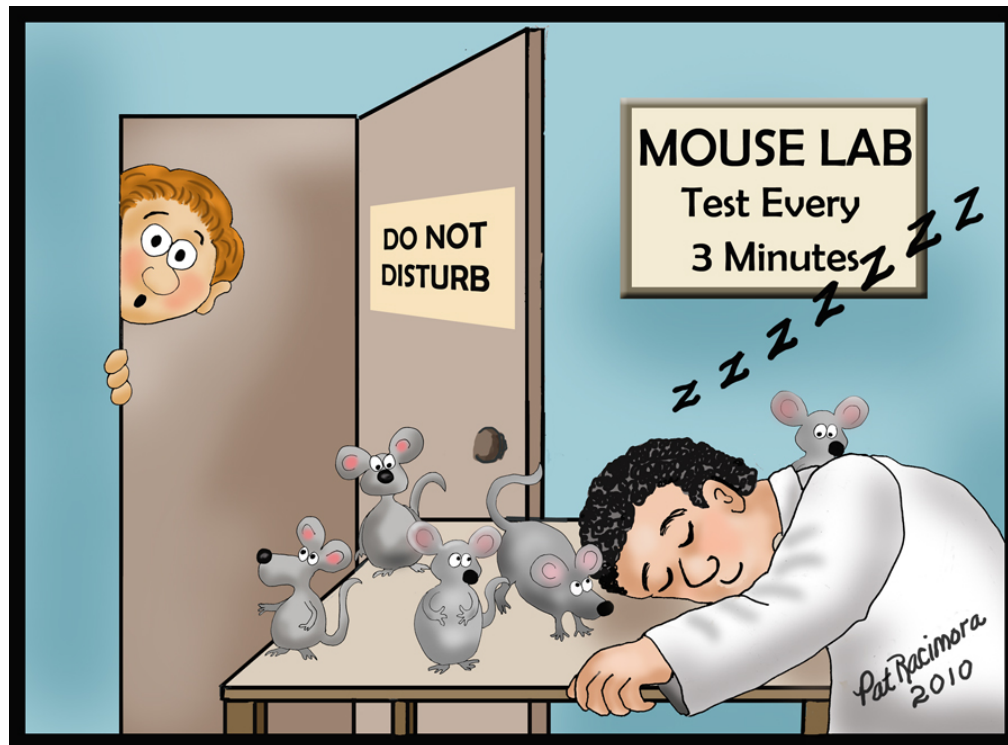
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RESPONDING TO RESEARCH WRONGDOING: A USER-FRIENDLY GUIDE



By
**Patricia Keith-Spiegel, Joan Sieber,
& Gerald P. Koocher**



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Foreword

Every once in awhile a product comes along that is destined to make a difference. This Guide is such a product. Informed by data generated through surveys and interviews involving more than 2,000 scientists, the Guide gives voice to those researchers willing, some with eagerness and others with relief, to share their stories publicly in their own words. There are stories from scientists who want to do the right thing, but are unsure how to go about it or concerned about negative consequences for them or their junior colleagues. There are accounts from researchers who took action, and are keen to share their successful strategies with others. On the flip side, there are those who hesitated and now lament not having guidance that might have altered the course of past events.

In response to these compelling stories, the Guide adopts a problem-solving approach that looks for ways to preempt wrongdoing in research, to create options for scientists faced with suspicions or evidence of irresponsible science, and to assist researchers in working through those options in a manner that reinforces the integrity of the science without risking career or friendships. The Guide pulls no punches. While it is intended to help researchers achieve a successful resolution of what are often very messy matters, it recognizes that this may not always be possible. It is this honest assessment that will appeal to scientists looking for fair-minded and useful guidance, not pious prescriptions that bear no resemblance to the real world.

Perhaps the most encouraging aspect of the research reported in the Guide is that scientists included in the study proclaimed “overwhelming support for the concept of a researcher’s *individual* responsibility to intervene when suspecting wrongdoing, especially if it rises to the level of a ‘serious nature’ (94%).” Surely, there is no argument that reporting research wrongdoing and preserving the integrity of the research record will depend largely on the willingness of individuals to intervene. Recognition of one’s professional responsibility to act is a necessary step in that direction, but it is not enough. What is also needed is a good compass that points in the right direction, warns of hazardous terrain ahead, locates where support is available, and helps people assess and reason through their choices. Just as the compass greatly improved the safety and efficiency of travel dating back to the 11th century, so too will this Guide greatly help scientists navigate the challenges they encounter when taking the moral high ground.

Mark S. Frankel

Director, Scientific Freedom, Responsibility and Law Program
American Association for the Advancement of Science

Dr. Frankel served as a consultant to the authors of the Guide.

About the Authors

Patricia Keith-Spiegel, PhD, (Claremont Graduate University) specializes in ethical standards in research and the mental health professions, ethical decision-making, and resolution of ethical conflicts. Her work on organizational and academic dishonesty, moral hazards, and irresponsible professional behavior has resulted in being a co- or principal investigator in three federally-funded grant projects from the Office of Research Integrity, the National Institutes of Health, and the Fund for Improvement in Postsecondary Education. Other sponsors for her work include the Kellogg Foundation (Excellence in Leadership Award), the 21st Century Foundation, and the George and Frances Ball Foundation. *Ethics in Psychology and the Mental Health Professions*, co-authored with Gerald Koocher, is in its third edition. She served two terms as Chair of the Ethics Committee of the American Psychological Association and is the author or co-author of three books and several dozen articles on issues related to ethics. She is a fellow of the American Psychological Association.

Dr. Keith-Spiegel regularly taught professional ethics and ethical leadership classes in her 35 years as a university professor and as the Director of the Center for Teaching Integrity at Ball State University, where she is the Voran Honored Distinguished Professor of Social and Behavioral Sciences, Emerita. She also taught at California State University, Northridge, where she was awarded the California State University Trustee's Award for Outstanding Professor across all state university campuses and disciplines. She is also a recipient of the Distinguished Professor Award from the American Psychological Foundation. She was a visiting Professor of Psychology in the Department of Psychiatry at Harvard Medical School and a Senior Research Associate at Simmons College.

Keith-Spiegel is a past-President of the Western Psychological Association and was President of the Division of Teaching Psychology of the American Psychological Association.

Joan E. Sieber is Professor Emerita of Psychology (California State University, East Bay), Senior Research Associate at Simmons College, Senior Research Associate at the Center for Public Policy, University of Houston, and a Fellow of the American Psychological Association. She began her professional and research career with the goal of using applied experimental research on decision skills to develop tools for teaching decision-making under conditions of uncertainty and ambiguity. In 1975, she turned to developing methodological solutions to ethical problems in human research. She had been discovering ways to teach elementary and middle school students how to determine when it is warranted to be uncertain, but she became discouraged that curriculum developers were disinterested in applying her discoveries. This time, however, her work immediately found practical applications. She has been involved in one aspect or another of teaching ethical decision making ever since.

During the last 35 years, she has specialized in empirical research on questions of scientific ethics, culturally sensitive methods of research and intervention, data sharing methodology, and whistle-blowing. She served as Acting Director of the National Science Foundation program Societal Dimensions of Engineering, Science and Technology in 2001-02. She has served on six IRBs, having chaired one in academe and three in industry. She serves as a site visitor to IRBs seeking accreditation, sat on the Accreditation Council of the Association for the Accreditation of Human Research Protection Programs (AAHRPP), and serves on various editorial boards and grant review panels. She is the founder and Editor-in-Chief of the international peer-reviewed nonprofit educational journal, the *Journal of Empirical Research on Human Research Ethics (JERHRE)*, which is published by University of California Press, and can be found on MEDLINE and at <http://caliber.ucpress.net/loi/jer>

Gerald P. Koocher, PhD (University of Missouri, '72) serves as Professor of Psychology and Dean of the School of Health Sciences at Simmons College. Prior to 2001 he served as Chief of Psychology at Boston's Children's Hospital and Judge Baker Children's Center, and Executive Director of the Linda Pollin Institute at Harvard Medical School. He remains a Senior Associate in Psychology at Children's Hospital and Lecturer at Harvard Medical School.

Currently Editor of the journal *Ethics & Behavior*, Dr. Koocher previously served as Editor of the *Journal of Pediatric Psychology* and *The Clinical Psychologist*. He has published more than 200 articles and book chapters and authored or edited 13 books including *Ethics in Psychology and the Mental Health Professions*, the *Psychologists' Desk Reference*, and *Clinician's guide to evidence-based practices: Mental health and the addictions*.

Elected as a Fellow of twelve divisions of the American Psychological Association (APA) and the American Association for the Advancement of Science, Koocher has earned five specialty diplomas from the American Boards of Professional Psychology (Clinical, Clinical Child /Adolescent, Family, Forensic, and Health Psychology). He holds active psychology licenses in Massachusetts and New Hampshire.

Active in professional affairs, Dr. Koocher served as President of the Massachusetts and New England Psychological Association, and three APA divisions (Clinical Psychology, Psychotherapy, and Children, Youth, and Family Services). He served as President of the APA (2006) and currently serves as a Trustee of the APA Insurance Trust. For more information, see his professional web site: www.ethicsresearch.com.

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RESPONDING TO RESEARCH WRONGDOING: A USER FRIENDLY GUIDE

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Chapter 1:

Discovering Research Wrongdoing— Why You Need to Consider Getting Personally Involved

Always do right; this will gratify some people and astonish the rest.
Mark Twain

You have come across some unsettling information. A colleague or an assistant or even your supervisor may have purposefully or inadvertently engaged in an act that will result in invalid data or a wrong against others. You may be in the position either to solve a problem, engage in damage control, or refer evidence to the proper office charged with pursuing the matter further. In short, you may be able to promote sound and responsible science.

IMPORTANT: If you are in the process of deciding what to do about a possible instance of research wrongdoing, please read this entire guide before proceeding. Although we are proponents of informal and collegial intervention when appropriate, there are conditions under which an intervention should not be attempted on your own.

Maybe you have observed evidence of fabricating or falsifying data or plagiarizing the work of others. Or perhaps you suspect other types of purposeful, reckless or negligent conduct that are discussed less often but can still corrupt the scientific record. Irresponsible science can result from haste, carelessness, cutting corners, malfunctioning equipment, incompetence in the methods employed, inadequate record keeping, personally-held biases, conflicts-of-interest, lax supervision or poor training of assistants, deceptive use of statistics or inappropriate statistical analysis, excessive data dredging, selective reporting, ignorance of scientific principles, and biased sampling procedures. Irresponsible science can be committed purposefully or unintentionally. (In Chapter 2 we will describe in more the varieties of research wrongdoing and other errors.)

So, what should you do when you observe or suspect wrongdoing committed by someone with whom you work or that you stumble upon in some other context? Should you infer that it is a one-time only mistake and then forget about it? Do you believe that others will take care of it, letting you off the hook? Do you trust that what goes around comes around, and that somehow the matter will take care of itself down the line? Do you convince yourself that no one will be harmed, even if this pattern of behavior continues? Or should you consider that there is something you can and should do to prevent or minimize the damage that would otherwise affect the scientific record and your institution? You have an important decision to make.

We aspire to help you select a course of action that reduces risks to you while, at the same time, fosters the conduct of responsible science. Handling the matter informally can lead to a successful resolution. At other times an incident merits involving appropriate others or taking the matter to a more formal level. Sometimes it may not be possible or reasonable to do anything. Sometimes the risks to you will be too great to act, given your personal situation. We will present indicators for all of these options.

We designed this guide to offer very personal advice for you to consider when faced with this difficult decision. We prefer an informal style. ***So we write as if you, the reader, is asking us questions—a Q&A of sorts.*** We invite your comments for us to consider for inclusion should we revise or update this guide.¹

OK. Here goes. How did you come up with the guidance you are going to give me?

¹ Email Koocher@Simmons.edu to offer suggestions or ideas for future updates of *Responding to Research Wrongdoing*. If you share your own experience, please do not reveal any identities.

Much of our advice is based on the results of a project funded by the National Institutes of Health and the Office of Research Integrity (ORI).² We learned a great deal from over 2,000 scientific researchers who shared with us accounts of being put into the position of deciding what to do about perceived questionable behavior committed by their supervisors, colleagues, assistants, or students. We also incorporated some of our own previous work as well as the research and literature on irresponsible research conduct and whistle-blowing as well as policies offered by ORI, NSF, and other federal guidelines. In addition, we gained valuable input from our consultants, all of whom have extensive and relevant expertise.

Scientists are supposed to be devoted to discovering truth. So, have I stumbled upon something new and rare?

Cheating in science or engaging in unethical research conduct is unfortunately neither new nor rare. Accounts of probable misconduct date back at least several hundred years. Early famous scientists who appear to have faked or fudged some of their data include Galileo Galilei, Sir Isaac Newton, Abbe Gregor Mendel, Louis Pasteur, Robert A. Milliken, and Sir Cyril Burt.

Estimates of the current incidence of research wrongdoing are necessarily inexact, as is true of data on any deviant behavior. Consequently we depend on reports by those who observe or learn about scientific misbehavior committed by others. The rate of reported wrongdoing is disturbingly high (e.g., Eastwood, Derish, Leash, et al., 1996; Steneck, 1999; Swazey, Anderson, & Lewis, 1993; Zweibel & Goldstein, 2001). Yet relatively few cases are ultimately reported formally to regulatory agencies (e.g., Glick, 1989; Tagney, 1987; Titus, Wells & Rhoades, 2008).

In a study conducted by the Office of Research Integrity (ORI), Titus (2008) and her associates surveyed 2,212 NIH grant holders and found that 9% of their sample reported observing incidents of fabrication, falsification, or plagiarism within the last three years. Our own work also surveyed NIH grant holders, although we expanded the types of incidents that could result in invalid data or other wrongs and applied no time limit as to when they occurred. All but 406 (or 16%) of our 2,599 participants reported personal knowledge of what they perceived to be research misconduct or some other form of irresponsible scientific conduct. Many of our participants relayed more than one occurrence to us, and over 50 of them recounted more than 5, resulting in a total of 3,527 incidents.

Well, I am a little nervous about this. Can you explain why should I even consider getting involved?

In upcoming chapters we will discuss the hazards involved with being proactive when learning of or suspecting research wrongdoing. We will also provide findings about variables that are likely to account for successful and unsuccessful interventions. But first we present the case for strongly advocating that you intervene actively.

The first advantage favoring your involvement is that you know about expectations for responsible and ethical behavior of others working in your specialized field. And, you stand in an advantageous position to observe or hear about irresponsible or unethical behavior among those with whom you work. As a mentor or educator, you may also be in a position to correct misbehavior committed by supervisees, students, and others who work under your direction. If you are in a more junior position, you can still play a role, although getting involved holds more potential risk. Regardless of your status, because of your presence on the scene, you may be able to prevent many types of research wrongdoing from ever occurring.

You may already know the reputation of individual(s) involved and how they will most likely respond to an intervention. And you know (or can find out) who or what office in your institution could handle an intervention if it would not be appropriate for you to attempt to resolve the matter yourself. Most importantly, you may be the **only** person who can do anything proactive.

² Gerald P. Koocher, Principal Investigator; Patricia Keith-Spiegel and Joan Sieber, Co-investigators.

Why might I be the only person who could help?

We adapt from a theory of proximate causes of academic dishonesty to illustrate how one person may be in a position to deal successfully with both unintended and purposeful research wrongdoing (Whitley, 1998; Whitley & Keith-Spiegel, 2002).

Committing a *purposeful* act of research wrongdoing rests on three factors:

1. The colleague's moral attitudes towards committing an act of research wrongdoing and what the individual perceives as the norms regarding the act;
2. The benefits that the individual expects to achieve by engaging in wrongdoing; and
3. The perceived risk of getting caught.

So, if a colleague can rationalize committing an irresponsible or fraudulent act, perceives a benefit in doing so, and senses a negligible risk of discovery, the motivation to cheat becomes strong. At that point only *one* source of intervention remains available, and that is **situational constraint**. Those who work with or near the malintentioned researcher or who possess inside knowledge in some other way will likely constitute the **only** sources of situational constraint. It may be possible for them to prevent the completion of bad science, or they may act to correct or report an action that has already occurred.

Even if the act was committed unintentionally the fact still remains that you could be the only person in a position to try to set things right. (We will have much more to say about unintentional mistakes and accidental research errors in upcoming chapters.)

Do you know for sure that getting personally involved actually ever works?

Absolutely. Of the participants to our survey who knew of an incident, the majority attempted to get involved in preventing or solving the problem. In over two-thirds of those incidents the outcomes were rated as "very satisfactory," "satisfactory," or "neither satisfactory or unsatisfactory" even if the problem was not or could not be fully worked out. Twenty eight percent of our Interveners were able to resolve at least one of the incidents they shared with us.

Regardless of what our survey participants did upon learning of wrongdoing, they reported overwhelming support for the concept of a researcher's *individual* responsibility to intervene when suspecting wrongdoing, especially if it rises to the level of a "serious nature" (94%). The overwhelming majority (88%) agreed that researchers had a responsibility to report acts of research misconduct to the appropriate institutional office. A majority but somewhat lower percentage (60%) believed that their own colleagues would also intervene or report such incidents. We received many very favorable comments about our goal of putting a helpful guide online. Our survey participants wished they had had such a guide in their time of need.

Can you give some actual examples of how this worked?

Consider these scenarios adapted from the stories our survey participants shared. The wrongdoing would likely have gone totally undetected were it not for their personal intervention.

He off-handedly confided in me that he was going to alter his data a little, even though he knew he shouldn't. He said he had worked too hard on this project to risk getting statistically insignificant findings. He had convinced himself that had he collected more data the results would have turned out far better. We were pretty good friends, so I told him that he had to be truthful and live up to his own reputation as a scientist that others looked up to. He agreed that he had a "weak moment," and apologized. I am quite sure he did end up analyzing the data correctly.

Thankfully he asked me to take a look at his manuscript before sending it off for review. I noticed a number of sentences that bore a too-close resemblance to the work of others. I asked him how his background literature section was created, and he told me that his graduate assistant had done a search and created a compendium from which he borrowed generously. When I told him that many of the unattributed sentences in his manuscript were directly from the work of others, he was mortified. He realized that he probably had not given the assistant sufficient instructions on how to summarize. Now I feel like the mouse that took the thorn out of the lion's foot. When we are alone, he still thanks me for "saving his hide."

I was able to ascertain, by comparing lab notes and the data I had contributed to those in the final analysis, that data had been altered or not reported at all. I reported her to the research office. The administration seemed appreciative that I was able to find sufficient evidence regarding her misconduct. They said that things could have gotten much worse for the reputation of our hospital had I not come forward and reported what I discovered.

If I do get involved, what's in it for me?

Accurate information is vital to every scientist's research (Steneck, 2001). Society pays for bad science, and that costs all of us in the end. Publicly funded grant money is squandered on poorly conducted or fraudulent research, and the waste is compounded when medical treatments or procedures are adopted or products are marketed based on faulty clinical trials.

Research progress can be stalled or misdirected for years when scientists build upon the tainted findings disseminated by others. Scientists may spend considerable time, energy, and resources only to find that they cannot replicate someone's work because that work was fabricated or the research was poorly conducted.

Researchers can suffer harm from the misconduct of others within their same institution, program, lab, or even from a collaborator. If a colleague down the hall engages in misconduct and is eventually discovered creating considerable embarrassing publicity, everyone in the organization suffers a degree of taint. Such disclosures have led to costly litigation, congressional investigations, and a ruling that *all* investigators at a major university must undergo formal training in research ethics. The negative aura that follows such publicity can bedevil an institution for years. Consider this example:

I had the misfortune of being listed as a co-author on a paper that was later confirmed to have contained some bogus data. The story took to the academic circuit like wild-fire. I had nothing to do with collecting that data, and yet my reputation was blemished.

Finally, all researchers are harmed whenever the public learns of egregious misconduct cases. The support and trust of the public is essential to the stability of, and respect for, all scientific fields.

Going Forward

We pause to comment on the terminology used throughout this guide.

"Our survey participants" and **"our research"** always refers to our large online survey of over 2,500 NIH principal investigators about their thoughts and experiences with incidents of research wrongdoing.

"Informal intervention" refers to actions you take by yourself (or maybe with another colleague) without formally reporting the matter to official channels within your institution. We use **"formal reporting"** and **"official reporting"** interchangeably to refer to reporting your allegations to the appropriate office within an institution (usually your own) for them (not you) to investigate.³ **Public**

³ One might speak confidentially with a superior (e.g., a dean or a supervisor), and still go on to act alone in an informal capacity.

whistleblowing refers to bypassing your institution and/or the funding agency to tell the media or some outside organization what you know or suspect.

“Research misconduct” is a term reserved exclusively for acts involving *fabrication, falsification, and plagiarism* (FFP). Why we limit this term to these three acts is explained in Chapter 2. Other actions that are unethical, are wrong, and/or produce poor quality science—whether purposeful or not— are referred to as **“irresponsible science,” “research errors”** or **“research mistakes,”** and sometimes just **“bad research.”** When we want to lump *all* actions together (including FFP), we use the term **“research wrongdoing.”** The next chapter looks at the specific meaning of these actions in more detail.

“Research integrity” is a frequently used term to describe responsible science and its conduct. The Office of Research Integrity (ORI) is a division of the Department of Health and Human Services that promotes integrity and the conduct of responsible research in biomedical and behavioral research projects funded by the U.S. Public Health Service (PHS). We will describe more of ORI’s function as well as the policies of other federal agencies in Chapter 8.

“Institution,” “organization,” and **“workplace”** are terms we use interchangeably to designate settings in which research is conducted. These could be universities, hospitals, community agencies, private organizations, businesses, or government agencies.

“Person of concern” and **“suspected individual”** (or very similar terms) refer to those who are believed to have committed—purposely or unintentionally—some form of research misconduct or other irresponsible act, as will be described in the next chapter. In Chapter 8, dealing with **formal reporting**, we will often switch to the formally-used terms: **“complainant”** or **“accuser”** for the one who reports an act of wrongdoing and **“respondent”** or **“the accused”** for the individual against who an allegation has been made.

Chapter 2:

What Do You Suspect Has Happened?

*Your manuscript is both good and original, but the part that is good is not original,
and the part that is original is not good.*
-- Samuel Johnson

An important step in assessing what you suspect, and before deciding what to do about it, is to establish for certain that the act in question is research misconduct or some other irresponsible act or mistake that could negatively impact the scientific record or cause wrongs to others. People working in the research environment can have difficult personalities or odd idiosyncrasies that prove annoying or disruptive, but such behavior does not qualify, in and of itself, as research wrongdoing.

This chapter offers brief descriptions of the core acts that can corrupt the research record with bad data or cause others harm. They are divided into two groups:

1. Acts that fall under the current legal definition of research misconduct; and
2. Other irresponsible scientific practices or errors that are either purposeful, unintentional, or negligent, but do not fall under the formal definition of research misconduct.

Again, what exactly does the term “research misconduct” mean?

Legally speaking, the term research misconduct refers to three types of actions: fabrication, falsification, and plagiarism (or FFP for short). The formal definitions cited follow⁴:

Fabrication involves “making up data or results and recording or reporting them.” This definition is the most straightforward of the three components of research misconduct, requiring little explanation.

Falsification refers to “manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.” Falsification occurs in many blatant as well as more subtle forms. These might include:

- Manipulating sample selection or testing conditions
- Withholding details in the reporting of the methodology that bear on a full understanding of the results
- Excessive data torturing after the appropriate scope of analyses fails to support a desired outcome
- Inappropriate assignments into random control group protocols
- Failing to report disconfirming data
- Re-running experiments to increase the chances of getting desired results

Substantial harm obviously occurs when researchers engage in fabrication or falsification. Noise and errors are introduced into the scientific record whenever one simply makes up data or distorts the research record, and other researchers waste their time and resources attempting to replicate or build on bogus findings. Applying such findings could result in harm to others. Serious infractions that deviate markedly from the standards of the discipline involving fabrication and falsification wreak considerable damage on institutions and science generally and should be dealt with somewhat differently than most other types of wrongdoings. (See Chapter 8.)

Plagiarism is defined as “the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.” This broad definition includes unpublished work and other intellectual

⁴ http://ori.dhhs.gov/misconduct/definition_misconduct.shtml

property such as software, data, and know-how. Plagiarism does not normally threaten the accuracy of the research record because it primarily results in duplication. However, a product has been stolen, and the rightful creator has been cheated. Undetected plagiarists have fake accomplishments on their resumes that may illegitimately advantage their careers.

Inadequate attribution is a milder form of plagiarism and more likely to occur unintentionally. Here the work of others is copied or barely paraphrased without indicating that words have been borrowed, despite the fact that the author of record is cited. This is often considered a less serious offense, yet suggests ignorance of protocol and slipshod scholarship.

Fabrication, falsification, and plagiarism currently comprise acts that qualify as reportable to funding agencies. Some have argued for expanding the definition of research misconduct to include some of the other forms of bad research practices we will describe in the following pages. But currently FFP constitutes the three primary researcher sins of commission, with severe breeches of F & F being treated more seriously because of the damage that they inflict on the scientific record.

Federal policies may help clarify if an ambiguous incident qualifies as one that should be scrutinized. We suggest becoming familiar with such websites as the *Office of Research Integrity* (ORI) (<http://ori.dhhs.gov/>), the *American Association for the Advancement of Science* (AAAS) (<http://www.aaas.org/spp/sfrl/integrity.shtml>), the *National Science Foundation* (NSF) (<http://www.nsf.gov/oig/hotline.jsp>), and the *Federal Policy on Research Misconduct* (http://www.ostp.gov/cs/federal_policy_on_research_misconduct).

What forms do the other acts of bad science take? How do they differ from research misconduct?

Here we describe seven categories of irresponsible or unethical acts, although these often overlap. They can be committed purposely, negligently or unintentionally. Importantly, many of these actions or conditions can cause as much (and sometimes more) damage to the scientific record as do fabrication and falsification. Because they do not fall under the definition of research misconduct, they may be more amenable to informal resolution.

Failure to follow the regulations of science. Federal regulations guiding the conduct of research with humans and animals have become increasingly detailed and, some say, restrictive. However, given the documented abuses of the rights and welfare of human and animal research participants, all researchers must follow the regulations promulgated by federal agencies (e.g., U.S. Department of Health & Human Services, 2005).⁵ Dismissing or violating the federal regulations can occur in many ways, including:

- Failing to obtain voluntary and informed consent before enrolling human participants in a study (except as expressly permitted by the regulations)
- Sidestepping or ignoring one's institutional review board (IRB) or its directives
- Failing to assess adequately the potential risk to participants
- Violating participants' rights to confidentiality
- Failing to inform participants of the risk of participation
- Failing to communicate effectively with one's research population, particularly low-literacy or non-English speaking populations
- Coercing participation by appealing to participants' vulnerabilities
- Providing inadequate care of research animals

Although breaking the rules of science does not usually appear in discussions of irresponsible science, when investigators disregard the guidelines for responsible scientific conduct the research record can also become distorted.

⁵ Code of Federal Regulations. Title 45 Part 46 Protection of Human Subjects. An online version is available at <http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>.

Incompetence. No one sets out to be purposely inept. However, today it is far more difficult to be an expert in all facets of executing a research project, given that the scientific enterprise has become so specialized, complex, and technologically sophisticated. Scientists do not always recognize their own inadequacies. Problems can manifest themselves in several ways, including:

- Reliance on outdated or inferior methodologies when improved techniques are available
- Faulty research designs and statistical procedures
- Inadequate sampling techniques
- Lack of the skills to conduct a particular study or use a particular technology
- Inappropriate statistical analyses
- Insufficient resources to do the research properly
- Inexperience in the subject area
- Insensitivities to the participants' culture and language

Carelessness. Although carelessness rarely arises from dishonest motives, its impact on the quality of the research record can be serious.

Shoddy work can easily introduce error into the scientific record. Some people have an ingrained personality style of avoiding attention to detail. Others who normally act conscientiously may become hurried or distracted. Some may find their attention diverted by stress, personal problems, or a looming deadline. Examples of how carelessness can reveal itself include:

- Lackadaisical record-keeping or other disregard for accuracy
- Haphazard data collection and storage
- Failure to back up data files
- Failure to secure confidential records
- Failure to track expenses adequately (e.g., not saving receipts)
- Cutting corners to save time
- Insufficient monitoring of the project's progress
- Neglecting the maintenance of lab equipment
- Failure to check for arithmetic or other accuracy errors when entering paper data into computer files
- Inattention to safety issues
- Insensitivity to the special needs of vulnerable research participants

Inadequate supervision of research assistants. Carefully monitoring students and other assistants is a supervisor's legitimate duty and responsibility. Assistants can become source of considerable purposeful or unintentional error, especially when the monitoring of their work is inadequate. We tend to focus on the competence and reputation of the primary investigators—those already fully trained—when evaluating a proposal or a research paper and don't think about those who collected or recorded the data. The investigators themselves may never know that the stressed-out or less-committed assistants are confused, cutting corners, or making it all up.

Student assistants may not be fully committed to upholding scientific ideals. The data on surveys of undergraduate students suggest that the majority—including the brightest from the best schools—have engaged in serious forms of cheating at least once. Most were never caught (Whitley & Keith-Spiegel, 2002). To the extent that undetected dishonesty has been reinforced with better grades and other perks, assistants can pose real danger to a scientific project.

Sometimes errors on the part of assistants are not committed intentionally, but rather result from having work assigned that they lack the competence to perform. Assistants may want to appear to be more proficient than they actually are, and either do not speak up when they misunderstand directions or fail to ask for clarification. Careful supervision and regular progress meetings are essential.

Dishonesty indirectly related to work as a researcher. Actions that may not directly involve the actual conduct of research itself can still corrupt science. Some of these involve character deficits that could spread across a range of research-related actions. Others can result from having more to do than one can handle, and still others could come from poor management skills. Below we list a few ways such acts on the part of researchers and assistants may serve as indicators that something else that is unethical or irresponsible could be going on:

- Failing to report conflict-of-interest, such as having a financial interest in the outcome of an experiment
- Misusing or misappropriating grant funds
- Including examples of inflation, distortion, or bogus accomplishments on one's resume or grant application
- Making too many demands to meet unrealistic deadlines
- Spreading workloads too thinly across multiple work-intensive projects
- Limiting communication among workers on different components of large projects
- Failing to share credit for accomplishments with other significant (perhaps more junior) partners
- Bullying others into surrendering some rights for the sake of one's research
- Reneging on promises made to team members or research participants
- As journal editors or reviewers, applying unfair biases for or against certain types of research or particular authors in their acceptance/rejection decisions

Difficult or stressful work environments that impact the research process. Research usually takes place in the cultural context of an institution, be it a university, hospital, clinic, or private laboratory. Much research on corrupt, unfair, and incompetent organizational leaders has demonstrated how employees can become caught up in the misbehavior. However, only a few papers apply such findings to the settings in which scientific research is conducted (e.g., Keith-Spiegel & Koocher, 2005).

Unhappy, angry, frightened, harassed, or burned-out investigators (and their assistants) are less likely to do stellar work. Individual researchers who are poor role models for research integrity place great stress on co-workers that can, in turn, affect the quality of their work.

Some specific examples of what characterizes a difficult work environment include:

- Mistreatment or disrespectful treatment of subordinates
- Sexual harassment or other form of exploitation
- Difficulties related to mentally unbalanced or stressed-out supervisors
- Favoritism and other biasing factors that create poor morale or acting-out by subordinates
- Conflicts among administrators or administrative policies
- Contentious relationships among individuals or factions in a close working environment
- Toxic mentoring whereby supervisees are socialized to behave unethically

Publication and Authorship Disputes. Publication credits are vital to those involved in research for the following reasons:

- Publication credits are often essential for obtaining, advancing or retaining employment, or getting grant proposals funded.
- One's reputation in the field is heavily based on publication credits.
- The senior authorship position is especially coveted because it is the name by which the paper is indexed.
- Readers assume that the first-listed person contributed more to the work than anyone else.

Malice and irresponsibility are not always at issue, but we included this category in our survey because people can and have been wronged and exploited. Increased specialization in research areas

and techniques means that more individuals are involved who have no or minimal overlapping skills, thus making it more difficult to order authors' names in a way that all will find agreeable.

Of the 3,835 incidents reported to us, 601 (17%) were related to alleged unfair credit assignment and publication wrongdoing (excluding plagiarism). Those with more power are in a position to take over the senior or higher positions in the authorship lineup despite minimal contributions to the project, infuriating those who perceive themselves as having contributed more (Holaday & Yost, 1995).

Allegations over wrongful treatment in assigning authorship credits are common (Sandler & Russell, 2005). Because the conventions for assignment or order of authorships are not exact and differ somewhat among disciplines and institutions, the potential for disagreements is heightened. The result can be honest differences in the perception of the value of individual contributions. Reasons for disagreements include a distorted perception common among authors of who did "most" of the work.

Do these other types of irresponsible science happen as often as fabrication, falsification, and plagiarism?

They probably happen more often than FFP (Swazey, Anderson, & Lewis, 1993). One survey concluded that mundane misbehaviors pose greater threats to science than does fraud (Martinson, Anderson, & DeVries, 2005). Our own data lend support to such conclusions in that only about one-third of the acts reported by our survey participants dealt with FFP. The remainder involved incidents representing the other categories presented above.

Some of these more mundane misbehaviors are often easier to observe and also often well-suited to an *informal* collegial intervention. They are less often motivated by an intent to deceive, and are more likely to arise from carelessness or insufficient knowledge or skill. Such interventions may stand a good chance of being private and non-combative rather than public or adversarial.

Can you offer an example of such an intervention for a more mundane misbehavior?

We gathered many examples. Below are two representative incidents.

I observed my lab mate's technician using unauthorized shortcuts on Friday afternoons when no one else on his project was usually present. I reported this directly to the technician's supervisor, softening the emotional impact by adding that I understand that employees cannot be watched every minute. Rather than being defensive, my lab-mate seemed grateful and took quick corrective action.

Compare this scenario to how things might have turned out had our survey participant attempted to make a federal case (literally!) of the incident. The colleague's paper would have contained contaminated data for which he might have to answer in a formal inquiry. Or had our survey participant turned away and done nothing, those data sets would have been included in his hapless lab-mate's published report.

Here is another example:

I attended a paper presentation and noticed that the authors used the wrong formula for the analysis, rendering the results and their interpretation somewhat misleading. I went up afterwards and shared my concerns. They seemed a little surprised at first, but also realized I was right. They said they would go back and redo their stats. I saw the project in published form later, and they had indeed included the proper analysis.

Perhaps the authors of the paper suffered some embarrassment, but the intervention likely saved them considerably more criticism had the paper been published with the error intact.

I know an arrogant colleague who rubs everyone in the department the wrong way. Does that sort of problem belong in this conversation?

The distinction between the merely unorthodox or poor professional etiquette and research wrongdoing is not always clear. Here is an example, adapted from one of our survey participants, of someone you would not likely want as a friend and would regret having as a colleague, but does not involve an actionable research transgression.

He kept taking my best research assistants away from me. I would train them and get them started on my projects, and he would lure them into his lab with promises of getting them jobs, introducing them to the “right people,” and the like. So I would have to train new people from scratch, slowing down my own work considerably. I complained. He only laughed at me, adding insult to injury by saying “training assistants is good practice.”

Don't some of these problems qualify as honest mistakes or differences of opinion?

Federal policy states, “Research misconduct does not include honest error or differences of opinion.”⁶ The meanings are not further elaborated. However, when used as a misconduct defense in Public Health Service sponsored research, the accused has the burden of proving by the preponderance of the evidence that the error was an honest mistake. An example of a difference in opinion might be an authorship order dispute or a debated data analysis technique.⁷

We believe that no bright line demarcates honest errors (e.g., errors arising from miscommunications and misunderstandings) from those that should never have occurred (e.g., incompetent or careless work). We also do not think that ignorance qualifies as a sufficient excuse for a serious mistake. We do, however, believe that irresponsible science can be unintentional, especially when those involved are new to what they are doing. In Chapter 7 we will have much more to say about how informal intervention can often bring desirable change with a much lower chance of negative fallout when research mistakes are believed to be honest or unintended.

Isn't it possible for an act to be irresponsible but so minor that I don't have to even think about mentioning it to the person who did it?

Sometimes an act may seem too inconsequential to worry about. But keep in mind that even small acts of irresponsible research can result in information that distorts the scientific record. Furthermore, minor kinds of mistakes will likely be repeated unless someone who notices steps in. Our work, as noted earlier, suggests that most minor acts of irresponsible science appear to be caused more by inexperience or paying too little attention to what is going on than by purposeful attempts to get away with something. So gently stepping in is often seen as a gesture of collegial goodwill.

If you have by now defined the actions of another, and they may require some form of intervention, the next chapter assists in the important step of evaluating the quality of your evidence before making your decision.

⁶ http://ori.dhhs.gov/misconduct/definition_misconduct.shtml

⁷ <http://ori.dhhs.gov/policies?QA-Reg-6-05.shtml>

Chapter 3:

Assessing Your Evidence

Some circumstantial evidence is very strong, as when you find a trout in the milk.
Henry David Thoreau

The completeness of your evidence that a possible incident of wrongdoing has occurred is an important step in assessing what to do and whether your intervention is a good idea. We present levels of evidence here, from the most reliable to the least trustworthy. The completeness of your evidence has special importance if you chose to make a formal report of your concerns to the appropriate office in your institution.

Direct observation. Witnessing an act directly provides clear evidence that wrongdoing has occurred. Here are several survey participants' stories:

A brash research assistant was caught writing out transcripts in the student lounge that supposedly came from interviewing young children, totally oblivious to the fact that we could see him do it. I went to his supervisor, who came down and saw it going on for himself. When questioned, the chagrined student had no choice but to confess. He then dropped out of the program and disappeared.

I guess he didn't notice that I was standing behind him watching as he erased his lab notes and entered different numbers.

This is a true story. One researcher got so angry at a colleague that he turned his colleague's laboratory rats loose in the university botanical garden. His act was observed by several witnesses.

Assuming you have not misunderstood what you saw, you have a solid case for getting involved. If any other witnesses will stand with you, all the better. The potential for denial is minimized if more than one person observed the wrongdoing.

However, direct observation can be tricky, as the recent work of Gino and Bazerman (2008) suggest. They found that people are likely to be more accepting and less critical if observed unethical behavior erodes slowly over time as compared to unethical behavior that occurs abruptly. Thus, when we apply these findings to research wrongdoing, a single brash act of data fabrication may be observed and condemned whereas witnessing someone occasionally altering a number may evoke less awareness and concern. This work justifies maintaining vigilance and guarding against being slowly swept into a context of deceit.

Direct evidence. Actual notes or records can uncover purposeful or inadvertent errors. Here are a couple of examples adapted from our survey participants' accounts:

He could have gotten away with it if it wasn't for a very responsible and sharp-eyed graduate student who just happened to keep, without his awareness, photocopies of each day's collections. The student worried that the study would be for naught in case of a fire or a tornado. Upon comparing the reported data with the student's copies, it was clear that the two did not match up. We caught it in time, thanks to the cautious student.

In the case of plagiarism, already previously published literature can be matched to the suspected individual's work.

I couldn't believe my eyes. There was my article pretty much word-for-word, except that it was published three years later in a different journal and under someone else's name! I wrote to the journal and to the Ethics Committee of the American Psychological Association.

Direct evidence can be a strong indicator, and, if unambiguous, even more powerful proof than direct observation. What someone sees holds out the possibility of denial. Be sure to handle such information carefully and ensure that it does not become contaminated. If the transgression has serious ramifications for science or your institution, it would likely be wisest to do nothing on your own and to pass it along to the appropriate research office to investigate further. (See Chapter 8.)

Violators' disclosures. Occasionally a researcher knows he or she did wrong and will confess to a colleague. The purpose of coming clean typically involves seeking some advice about what to do or how an ongoing situation can possibly be corrected. These cases provide an excellent opportunity to help fix a problem (or at least minimize any damage) or to ensure that it will not happen again. Here is an example:

He was so upset with himself. I actually felt sorry for him. He was having serious second thoughts about deleting the more extreme data points for no appropriate reason other than making his data look much cleaner. He had already submitted the article for publication, and it was accepted. We talked for almost an hour about responsible science and the pressures put on us to produce. In the end he decided to write the editor to say that some errors in the data had been discovered and ask that the manuscript be withdrawn, perhaps to be resubmitted later.

More often, the researcher reveals an error without recognizing anything amiss:

She was excited about her findings. They were statistically significant, but just barely. As she displayed her data I realized that she had misapplied a formula and entered the wrong number of degrees of freedom. I informed her of the mistake. She was so deflated. I worried that she would ignore me because the error would not be caught had she not shown me her calculations. But she recalculated the statistic and hopes to get her work published, even though the data no longer clearly support her hypothesis.

Such instances provide a ready opportunity to do an informal intervention that may save the individual a lot of trouble down the road. You may decide, however, to not necessarily respond on the spot, delaying until you have sorted out exactly what the best plan of action would be.

Credible second-hand information. You may have learned what you know through details from a plausible or trustworthy source. Perhaps co-workers junior to you who feel too vulnerable to act alone, or maybe students or post-docs who are unsure of themselves, come to you first with convincing-sounding accounts of what they have observed. Colleagues who have been around longer and who have more status and power in the organization will be magnets to less powerful individuals, especially with senior people who are seen as approachable and fair-minded.

Here are examples of credible second-hand incidents adapted from reports offered by our survey participants:

My colleague's post-doc is a thoughtful and well-meaning person who holds science in the highest esteem. So when he told me what my colleague asked him to do, which amounted to out-and-out lying on a grant application, I believed him. I felt obligated to talk to my colleague. The two of us went to my colleague together and discussed the problems with what she was about to do, even though the post-doc had misunderstood some of what she said. We had a good meeting and she agreed that her original plan would be misleading and that it would be changed. As far as I can tell, she and the post-doc still have a good relationship.

My research assistant told me about a disturbing conversation between himself and a friend who worked for one of my colleagues. The friend revealed that my colleague was never around to supervise. As a result, the assistants just goofed off much of the time. I went down unannounced to take a look for myself. Sure enough, nothing serious was going on. I told my colleague about the need for added supervision. He seemed somewhat taken aback, but I notice that he is in his lab a lot more now.

With second-hand reports the ground is not so stable, even when you feel convinced about the accuracy of your source. There are things you do not know, including whether your source perceived the situation correctly. Misunderstandings, anger, or bias may be distorting the matter as they saw it. So, unless you can collect more information it is best to proceed with great caution, using a very gentle approach whenever your suspicions are based on information that was passed along to you.

Suspicious data or writings. Findings that no one can replicate despite multiple tries as well as data that seem just too perfect could reflect fabrication or falsification. Replications can, of course, fail and data can turn out well for reasons totally unrelated to misconduct or irresponsible errors. Here wrongdoing is more difficult to prove without other attendant clues or additional work. For example, if the raw data are not available for review, there is more reason to be suspicious. Or if the data are produced too quickly given the complexity of the procedure or available resources, concern seems warranted. (Responsible researchers would do well to meticulously document their procedures and save their data indefinitely in case they are ever questioned.)

Here are two scenarios suggesting wrongdoing, adapted from our survey responses:

Her findings were stunning, too remarkable really as I have been studying the same population for years. I attempted to replicate them on my sample, but to no avail. I wrote and asked to see her raw data. But she refused, saying it was proprietary. I didn't believe that. I told her what my concerns were, and she ordered me to never contact her again. I felt I had no other recourse but to report my concerns to our research office.

At first I was elated over the initial results. We could be on the verge of a major breakthrough. But a little red flag went up as well. I wanted to substantiate our hypothesis, of course, but I expected more variability than what the data so far revealed. I decided to act on that worrisome feeling and to check things out more carefully. I broke the data down by who collected them and found that data entered by one technician were markedly different from those of the other two. I confronted the technician with the almost flawless entries and he confessed that he was under a lot of pressure in his life, but he wanted our study to turn out well. I thank myself every day for having qualms. What could have happened to me and the reputation of my lab otherwise is something I don't even like thinking about.

Discovery of suspicious writing suggesting plagiarism can occur in a number of ways. Sometimes direct evidence appears, as discussed previously. But other possibilities emerge with less clarity, as the case below suggests.

A colleague could hardly put together a decent sentence in his memos. He often forgot a verb, and his spelling and grammar were deficient. But his articles were always surprisingly precise. I guess suspicions were running high for a while. The Dean confronted him with a concern that he was plagiarizing his articles. He denied it, saying that he had someone go over his manuscripts and correct any problems. But he could not produce this individual, saying he couldn't remember her name. I did a little more digging using *Turn It In* [<http://turnitin.com/static/index.html>] and found originals in both older journals and books.

Suspicious data and writings must be approached with caution. Making an unfair or incorrect judgment is always possible.

Gossip and hearsay. When one cannot trace a source, deciding how to respond poses an impediment. Gossip often becomes embellished and distorted as it gets passed along. It could even have been originated as a purposeful attempt to smear to someone's reputation. View any information that arises this way with suspicion, and exercise great caution in considering any action.

Sometimes rumors can prove mostly accurate, and taking action is not always out of the question. Consider this example:

During our usual Friday afternoon happy hour at the local hangout, one of the post-docs said he had heard from a friend of a friend that one of my colleagues was "cooking" data. I asked more about it, but the post-doc didn't have any details. I suggested that the story may be false so it should not be repeated unless verifiable evidence presented itself. However, I decided to approach my colleague (who was also a friend) with the rumor. He seemed disturbed in a way that made me think the rumor might have been true. I am hoping that my disclosure of the hearsay may have forced him to think twice if he were cheating.

If no way exists to obtain any substantial, verifiable facts, you may choose to ignore gossip and hearsay or, as a professional courtesy, inform the suspected individual of the scuttlebutt as described in the above scenario. If the individual is guilty of what the hearsay suggests, you may have a salutary effect. However, we recognize that this constitutes risky business and may prove effective only if you feel reasonably confident that you can anticipate this particular individual's reaction.

If it is only gossip, is there a way to learn more?

If you do not have sufficient information, and you have ideas about how to obtain it, make sure that your quest is carried out without violating anyone's rights or giving an impression that someone is guilty when that is, in fact, unknown. You may try to gather information prudently from others who may know what happened.

YES: *Maybe you can help me understand why this group performed so poorly. What does the control group data look like?*

NO: *Do you think he cheated? The control group data look very fishy to me.*

Simple requests for information or clarification indicate honest inquiry. Assumptions and accusations may make you come off as wanting to harm someone.

Is there anything else I should know about the quality of my evidence?

Do keep in mind that unless your evidence is overwhelmingly strong, you know only one side of the story. The suspected violator may have an alternative and acceptable explanation for what appears to be wrongdoing. For example, we know of an incident involving a suspected inadequate source attribution in a published article. It turns out that proof existed that two authors actually did come up with almost the same material independently during the same time frame. In another case an undergraduate research assistant told one of our survey participants that her supervisor had asked her to alter data. It turns out that the supervisor was guilty only of poor communication to an inexperienced student. He had, in fact, requested that she turn frequencies into percentages.

Getting personally involved when someone has possibly engaged in research wrongdoing brings out many feelings. The next chapter discusses those feelings and some suggestions for handling them.

Chapter 4:

Dealing With Feelings About Getting Involved

“It is curious—curious that physical courage should be so common in the world and moral courage so rare.”
--Mark Twain

Learning of wrongdoing committed by colleagues, assistants, supervisors, or others with whom you work is unpleasant, and even the thought of getting personally involved is probably anxiety-producing. There may be a tendency to procrastinate, hoping it will all just go away. Rationalizations, such as making excuses for the wrongdoing or convincing yourself to discount it, may kick in.

Although previous research reveals a tendency for researchers to refrain from taking any kind of potentially corrective action, our research revealed a much more proactive trend. Of our survey participants who reported knowing of at least one incident, over 60% said that they attempted to involve themselves personally when they observed or learned about misconduct or other irresponsible research practices.

I do feel queasy about doing anything, even though I believe it would be the right thing to do.

Such feelings are common. Perceiving wrongdoing usually involves making an inference about the character of a co-worker as well as the caliber of his or her work, an inference we don't want or like to make. Some of the concerns listed below are more understandable and justifiable than others.

- A reluctance to appear disloyal to a colleague, work group, or institution
- A desire to avoid the risk of attracting negative publicity to your institution or agency
- A fear that your career and status would be jeopardized
- An apprehension that the institution's administration would not be supportive
- A worry that the suspected violator is difficult or may retaliate
- A hesitation because the suspected perpetrator holds an evaluative or supervisory position
- A belief that someone else will take care of it
- A decision that the matter is minor and not worthy of any involvement
- A concern that evidence is insufficient or too ambiguous
- A disinclination to bring possible harm to someone who is otherwise likeable or a friend
- A feeling of being too overburdened to take on yet another personal challenge
- An uncertainty about what actions to take
- A fear of being sued

Resistant feelings should be tempered with a careful analysis of the situation and a realistic assessment of risks and advantages to yourself and to science. Some acts that may seem minor may actually seriously damage the scientific record, so ignoring seemingly inconsequential acts may not be indicated. Or, intervening when the suspected individual is a friend could save someone you care about a lot of turmoil down the line. Sometimes taking action in spite of risks may greatly benefit coworkers or the institution, saving them from public scrutiny and criticism. A fear that your career may be jeopardized may be overplayed since half of our interveners had no negative repercussions of any kind. In fact, 10% said their status in the workplace actually increased as a result of attempting to right a wrong!

Do you have any information about what those who took action would have done if they could make that decision all over again? Do most of them wish they had done nothing?

We asked our survey participants who intervened what they would do if they had a chance to deal with the situation again. Only a third of them replied that they would make changes. And, before looking closely at the data, we also expected that most of those wished they had simply turned a blind eye

instead of getting involved. We could not have been more wrong! Only about a tenth of those expressing what they would have done instead reported that they would opt out.

So what would your survey participants have done differently if they had that second chance?

The vast majority of those who told us what they would do differently wish that they had acted *even more forcefully* in dealing with the problem! Or they would have anticipated the problem earlier and acted sooner. Many saw trouble brewing and waited too long to get involved. Some would have gone to a higher authority or pursued a more formal course of action, realizing that they needed more support or that the matter was not suited to their attempted informal intervention. Some mentioned that they should have documented the evidence better or instituted preventive measures that would have precluded the problem from ever happening. Only a handful would have quit their jobs or engaged legal counsel.

Why did the researchers decide to get involved?

We also wanted to know a lot more about why the 63% of those who had at least one incident of wrongdoing to report decided to get personally involved. It felt rewarding to read accounts of so many survey participants who described their courage and commitment to upholding the standards of their profession. Of those who chose to elaborate, their reasons in decreasing order of their frequency, follow:

- It was the right thing to do/an ethical duty.
- It was a scientist's responsibility/a professional duty.
- To do otherwise would have been damaging to their reputation/lab/ project/institution/organization.
- They were assigned to intervene by a superior.
- They wanted to help/support a colleague.
- They wanted to protect themselves.
- The act was too serious to ignore.
- To ignore it would have violated the public trust.
- They needed to prevent a friend/colleague/student from making a mistake.
- They were concerned that others would be harmed.
- The matter could be easily resolved.
- They were very angry over what was going on.

It sounds like you may be suggesting that we all have a moral obligation to intervene, right?

In an ideal world, everyone associated with research who knows about or observes misconduct or other research misdeeds would rise up and attempt to do something, even if only to pass the information along to someone or to an office that would investigate further. This would apply to both purposeful wrongdoing and unintentional errors.

Many of those who knew of instances of research misconduct and stood in a position to get involved but chose not to—especially if the research record seemed in serious jeopardy should the matter remain unresolved—felt what has been labeled “moral distress” (Austin, Rankel, Kagan, et al., 2005).

Here are two examples of lingering moral distress based on our survey responses:

I witnessed a colleague telling his student assistant to “change the *F* level” to indicate significant findings. This occurred years ago, yet I continue to experience a negative emotional reaction whenever I think about it. I did nothing to stop it.

A friend who was a post doc at the time told me this upsetting story. She watched, unobserved, as the head of the laboratory sat at his computer and altered the data records of a grant-funded project. She felt sure that something was wrong but was too afraid to ask him what he was doing. The published results reported strong support for an experimental treatment. Additional funding followed, but the treatment

did not ultimately prove efficacious. The suspected offender died more than a decade ago. However, my friend reports that she regrets what happened back then and wonders if she could have prevented a serious ethics breach that caused trusting research participants a lot of time and pain as well as wasting funding and resources.

Over a third of our survey participants who did not act, even though they stood in a position to do so, expressed misgivings. They were often still unsure of what they should have done. Here are examples based on our survey reports.

I believe that a post doc was telling the truth when he told me that his supervisor conducted his research so haphazardly that the data would have little meaning. But he asked me not to tell anyone. He feared for his own welfare and was reluctant to get involved. The perp had a well-funded grant, and if he published invalid results, anyone who tried to apply his findings could face possible jeopardy. But, I had no first-hand knowledge. I know there must have been more that I could have done.

What was I supposed to do? I knew it was wrong to alter data for no reason other than to make the findings look better. He said that this is the way the data should have come out, and I sincerely believed he was right about that. We had a bad sample, but there were no resources to do more tests. But, I still chew on it.

The primary purpose of this Guide is to help those who feel they *should* do something but are not sure what to do. We will be offering ideas as well as accounts of what others have done. However, we concede that situations exist wherein action is too *personally* risky. Each instance is unique, and each person must factor several variables into their final decision-making as will be covered in Chapter 6.

What were the reasons some of your survey participants did not intervene?

We asked the 807 survey participants (or 37% of those reporting knowledge of at least one incident of wrongdoing but never intervened) why they did not get personally involved relative to the scenario they reported to us. The most frequently reported reason was that they did not see the matter as “their problem.” At first we thought that our survey participants were using that answer as an excuse or were rationalizing (and some apparently were), but further analyses revealed that in most of these cases the survey participants were too remotely involved, or that the matter was already being taken care of by others.

Other frequently mentioned reasons for deciding against getting involved included:

- The suspected person was difficult to deal with
- The suspected person was their superior
- The evidence seemed insufficient
- They feared that there would be no institutional support
- They could not think of how to respond
- They were concerned that their career would be jeopardized
- The matter did not seem serious enough to them to warrant involvement

We should note that many of those who got involved did so despite having some of these same reservations. Sometimes their concerns failed to materialize, and at other times they materialized when not expected. The next chapters provide more information about the potential hazards of intervention and indicators for you to consider before charting your course.

Chapter 5.

Making a Decision to Act (or Not)

Wisdom is knowing what to do next; virtue is doing it.
David Star Jordan

We strongly advise against making a knee-jerk determination about what to do (or not do) based on what you know or suspect (except in those more rare cases when not acting in the moment would allow a problem to immediately materialize). This chapter reviews suggestions for effective decision-making, some of which are critical but not always apparent when decisions are made too quickly or without sufficient reflection.⁸ The actual process can range from an hour to days or weeks, depending on the clarity of your information and other considerations we have yet to cover.⁹

What are some of the factors about myself that will impact my decision?

Reviewing where *you* are coming from may help refine your own decision process. Here are some of the central ones:

- Your primary guiding moral principles
- Your judgment about the reprehensibility of a particular act, such as your perceived degree of harm or potential harm to you, the institution or to the scientific record or research participants
- Your perception of the motivations of the suspected researcher
- Your estimates of the likelihood that the act will recur unless there is corrective action
- Your perception of your role (e.g., victim, supervisor, friend, bystander)
- Your level of belief that researchers have a personal responsibility to uphold and advocate responsible science
- Your level of self-confidence, security, courage, and other personality and situational variables associated with taking action
- Your level of insecurity, fear, and other situational variables related to avoiding risk
- Your estimation of how you would feel if you did nothing but some form of damage occurred to harm science, research participants, the reputation of you or your institution, or others
- Your professional vulnerability (e.g., your perceived ability to retain your position or to move on with your career following the action you contemplate taking)

If you are (or perceive yourself to be) directly victimized by the conduct of another, you will probably feel more disposed to getting involved. Our survey participants who felt victimized were likely to take some action. However, if you recognize that your emotional involvement or vulnerability creates a hazard that will likely preclude a satisfactory outcome, you may want to consider passing the intervention task to another party. Extreme self-righteousness can end up being self-destructive.

The person I suspected of wrongdoing is from a different culture. Does that make any difference?

It certainly can. Whereas many proscribed acts qualify as unethical across all culturally relevant variables (e.g., fabrication), other factors can vary depending on the cultural context. Scientists new to doing research in the United States may need some degree of indoctrination to become thoroughly familiar with our expectations regarding responsible research and scholarship. Here is an opportunity for teachable moments, as illustrated in the following case.

⁸ Some hints for making decisions in the rare circumstance when suspected research wrongdoing requires an immediate response appear at the end of the chapter.

⁹ Our suggested model is partially adapted from other sources (Haas and Malouf, 1989; Hansen & Goldberg, 1999; Koocher & Keith-Spiegel, 2008; Tymchuk, 1981).

His literature review borrowed so heavily from the exact wording of the original authors that I had to ask him to redo it. He seemed puzzled. After a brief discussion we both realized that copying was not frowned upon in his culture and that this and other potential problems might recur. We went over our rules of science, and I was adamant about insisting that they be followed.

Should I keep a record of what I am thinking about and why?

Yes. It is highly recommended that you start keeping notes about what you know or suspect, how you made your decision, followed by accounts of what happens after that. Should you ever have to explain yourself to someone, this file would come in very handy. You can provide evidence that your intentions stemmed from a sincere concern and that you thought everything through before acting. This process is especially helpful if you end up deciding to make a formal report to the appropriate office within your institution.

The record should also assist you in feeling confident that you can clearly justify and communicate your evidence and position to others.

Should I share what I am going through with others?

What you know or suspect is not a story you want to be casually passing around! It is critically important that you choose the right people to consult. Your sense of confidentiality may not be held to the same standard by those with whom you do not have a long-standing trusting relationship. Breaking your confidence is especially likely if the story has some titillating features, as potential scandals often do. Should your concerns reach the suspected individual while you are still thinking about what to do, the potential for an effective intervention is diminished. He or she may even start plotting to lower your credibility to negate the impact of any action you may ultimately take. You would find yourself in a *very* uncomfortable position, especially if your suspicions prove to be groundless. In some circumstances, however, sharing your concerns contemporaneously with a person who can offer ethical and legal protections of confidentiality and privilege (e.g., a psychotherapist or attorney) can support the timelines noted in your personal record keeping.

Bottom line: The more you limit the number of people with whom you talk during your decision-making phase, the safer you are.¹⁰

Can't I even tell my partner or best friend?

Emotional support can come from one or a *very few* people you fully trust, possibly a family member or friend who may have no connection in any way with the matter. These are the people who will be there for you no matter what happens. They are **not** likely the ones, however, who will give you good advice. They may be far more interested in keeping you out of any potential discomfort or in sending you on a vengeful mission than rationally considering your situation and professional responsibilities.

We suggest that you not share identities of those involved. Also, no confidential information should be shared when talking to a friend or family member. For example, if your lab technician informed you of the problem and obtained your promise not to share her identity or the story with anyone until more evidence can be uncovered, you must honor that promise. Even loved ones have been known to engage in slips of the tongue.

¹⁰ An outside resource that might be useful is the Division of Investigative Oversight (DIO) operating out of the Department of Health and Human Services in Rockville, Maryland. Individual scientists can call in anonymously for an informal discussion if the project associated with the suspected research misconduct is supported with Public Health Service funds.

Who else can I talk to?

Collegial support might involve sharing with one or a *very few* highly trusted individuals you can count on to care about what happens to you and the institution. Do your homework about possible consultants and make the best choice. The right person can be very helpful.

Here are a few do's and don'ts:

- Do choose a confidant with a forthright manner who is properly placed in the organization and has a good perspective on things.
- Do try to find someone who can grasp the issues and who has already demonstrated a commitment to scientific integrity.
- Don't choose someone who is known to gossip or spread rumors.
- Don't consult with an individual over whom you have advantaged status; otherwise you are likely to hear only what he or she thinks you want to hear.
- Avoid consulting with anyone who has a close relationship with the suspected individual.
- Don't choose a colleague primarily because he or she is also a friend. Friendship clouds objectivity.
- Try to ensure vigorously that anyone you talk to agrees to keep your discussion confidential. Secure that agreement before you divulge what you know or suspect,

If you find yourself strongly disagreeing with the person you went to for advice, it would benefit you to obtain a second opinion from another reliable source. If that person agrees with your first consultant, you have some thinking to do!

The person you choose need not work at your institution. Some researchers, for example, have confided in their mentors from graduate school.

Also keep in mind that those from whom you seek support may not always react the way you had hoped or expected. They may politely express sympathy or concern, but not be willing to get involved. Some may even bluntly tell you that they do not want to know about it. Consultants may also share disparate views of the same individual you suspect of wrongdoing. This can feel confusing, but at the same time you will learn more about what you're facing.

Are there other sources of support?

The nature of the organizational culture in which you work plays a significant role in how you approach your decision. Organizational backing, should you decide to take action, is more likely when the administration is known for insisting on sound research practices and actively disavows misconduct. Our survey revealed that a relatively small percentage of our survey participants (140 cases or 5.1 %) who chose to act felt that they did not receive support from their institution. So, chances are your institution will be supportive, but try to find out first how it responds to allegations of research wrongdoing.

A decision to intervene, especially if it involves submitting a formal report, can prove problematic when an institution's policy favors expediency or engages in cover-ups. Such destructive organizational characteristics include benign neglect and support for and encouragement of unethical behavior by management, widespread and unchecked unethical actions by colleagues, unjust organizational policies, and intense pressure to perform. Some institutions may not be corrupt, but may fail to deal with a formal report adequately and fairly because of disorganization or lack of knowledge as to how to proceed. (More on this later.)

What if I have few options when it comes to support?

We hope that you can readily identify sources of support and backup. Should things become unexpectedly complex or difficult, you will benefit from having lined up other resources. Without them you can be left alone in a difficult circumstance.

We would note, however, that enlisting allies did not emerge as an *absolute* condition for a successful intervention among our survey participants. Many of them chose not to consult with anyone, and these interventions often turned out well. However, *and this is important to note*, these instances tended to involve informal interventions with students, assistants, or other subordinates, or dealt with people with whom they already had a respectful relationship, or the possible infraction would not cause serious damage and was perhaps an error, and the evidence was clear-cut. It is very risky to act without support if the individual you suspect is in the same work setting and senior to you, if your relationship with co-workers is contentious, or if your evidence is weak.

How much do I need to know about why the person of concern did what they did, assuming what I suspect is true?

You may not be able to figure this out in advance, especially if you do not work closely with the person you suspect. Ironically, the farther removed our survey participants were from the suspected violators, the easier it was for them to decide to take some form of action. We suspect that this is because any fallout would not likely be felt in their day-to-day functioning since their relationship with the person of concern was not as close as that with regular co-workers.

However, if you do know a lot about the persons of concern, this might prove helpful in assessing your options. No matter whether people are innocent, merely naïve, or outright guilty, it is useful to try to understand as best possible *their* view of the matter before deciding how you will approach them. Are they facing intense stressors in their work or personal lives? Could they have made a mistake without realizing it? Have they demonstrated any previous suspicious behaviors? Might their need for recognition or status be so great that they might cheat?

In the ideal situation, you can approach the individual informally and persuade him or her to do the right thing with a minimum of defensiveness, loss of face, and ill will. You may even evoke an expression of appreciation. According to our survey data, this happens far more often than we expected. In other instances, however, it is better to consider a more formal approach, as will be covered in more detail in Chapters 6 and 8.

I guess I need also to think about the impact that my decision might have on others. Right?

Yes. Try to evaluate the rights and vulnerabilities of all affected parties. Regrettable decisions sometimes result from failing to consider someone's right to privacy or due process. In some cases, confidentiality issues may preclude taking any further steps, as when someone confides in you but refuses ever to be identified or to serve as a witness and there is no alternative way to gather confirming evidence.

Moral and just decisions do not always protect every involved person from some form of injury. Therefore, if anyone could suffer undue harm, pause to consider any steps that could minimize the damage. Here is a scenario suggested by one of our survey participants that involved dealing with an exceptionally serious violation:

I realized that his post-doc really didn't have to be brought into it after all. We had plenty of other stand-alone evidence against our colleague, thanks to the post-doc. That led to two other witnesses who were unlikely to be damaged should things not go well. The post-doc would be vulnerable to reprisals should our attempt to expose our colleague fail, so we never mentioned what he shared with us to our dean.

There are really several ways I could go now. I could confront the person myself, I could ask a friend to join me, I could talk to my department chair or the dean, I could make a formal report to the Research Office, or I could wait a while longer and try to pin down more evidence.

Yes, and we encourage you to at least consider more than one possible action. Even consider the ramifications of not making a decision at this time as well as never doing anything. Establishing an array of possible actions allows you to find occasionally that an alternative initially considered less attractive may prove the best and most feasible choice after all.

Examples of how that process played out, adapted from two of our survey participants, follows:

At first I thought I would just go talk to him by myself. But then I thought that would be a little risky because I don't really know him well. So I thought about not doing anything. That didn't feel right because the problem could negatively affect a lot of people. Then I remembered that another colleague in our other location had raised the same suspicions with me a while back, so I decided to see if he would join me. He was willing to do that, and we decided to make a formal report.

I was going to pretend that I didn't know anything. But then I realized that I was actually complicit in any fallout to innocent research participants. I had a wise confidant who helped me figure out a couple of options. I ended up having a confidential discussion with his supervisor, a woman my confidant and I knew to be very fair-minded. She acted on my information.

OK, I dumped a couple of my ideas, but have a couple of alternate ideas left. What are my final considerations?

Consider the **benefits** of taking action. Might any of the following happen if you go ahead and take some action?

- The morale in my workplace could improve.
- The reputation of my workplace will be maintained or at least not as damaged as opposed to what could happen if the matter was divulged from another source.
- Action could preclude bogus or misleading data from becoming part of the scientific record.
- A colleague will be able to avoid potentially more serious problems down the line.
- The institution may be able to terminate an unethical colleague or assistant.
- Action will prevent or discontinue risks to research participants or other vulnerable persons.
- Action will preserve my own integrity and feelings of self-efficacy.
- Action will ensure that someone's rights are regained or upheld.

It's also time to enumerate the **consequences** specific to your situation of making the remaining actions(s) you are still considering. Reflect on what they are and if you can weather any that actually materialize.

- Action may involve emotional and social costs.
- There may be short-term, ongoing, or long-term effects.
- It may take time and effort to follow through with my decision.
- There are resource limitations.
- Innocent others may be put at risk.
- I may be put at risk.

Exactly what lowers or raises my risks?

If the individual is your student or supervisee or is of lower status than you, and/or if your evidence of wrongdoing or scientific error is strong, your risks will more likely be minimal. If your organization has zero tolerance for research misconduct and irresponsible science, your risks are also greatly minimized. If the suspected individual is removed from where you work and you have little or no interaction with him or her, risks may also be minimized because any unpleasant outcome is far less likely to impact your immediate work environment. If you have others who also know what you know and will join with you, risks are lower because the case will be perceived to be stronger.

Interestingly, if you believe that the person of concern did not purposely commit the error, the chances for a positive outcome are enhanced. It may be that the way one approaches someone who is believed to have erred accidentally or out of ignorance allows for a gentler interaction. Those who knew they were cheating may put up more of a fight. We will have more to say about this later.

If you are junior to the person(s) you suspect of wrongdoing or if your evidence is weak, the risks to yourself are much higher. Even though many of our survey participants confronted or reported others senior to themselves, we suggest caution. A lot will depend on the nature of the problem (serious misconduct vs. making a mistake) and your relationship with your superior. If your organization is known to be unresponsive to allegations of research wrongdoing, you risk being marginalized.

I understand the possible risks and still feel that I must act. Now what?

Scientists will remain strong and respected only to the extent that they willingly take appropriate actions in response to ethical dilemmas. This often requires courage. It is at this point that the decision-making process comes to fruition, and one actually does something. This becomes the most difficult step, even if the decision and course of action seem perfectly clear. According to Rest (1982), “executing and implementing a plan of action involves figuring out the sequence of concrete actions, working around impediments and unexpected difficulties, overcoming fatigue and frustration, resisting distractions and other allurements, and keeping sight of the eventual goal” (p. 34).

What if I have no choice but to make a decision on the spot?

You will almost always have some time to reflect on whether or how you will intervene when you suspect purposeful or accidental misconduct. There can be occasional exceptions. Here are two of examples where faster action was required, adapted from incidents supplied by our survey participants:

I came in unannounced to observe just in time to hear my graduate assistant start to give hints to the research participants as to the correct answers that would make the data come out the way we hoped it would. I was able to stop him in time, and dealt firmly with him later.

It was an accident waiting to happen, and I am thankful that I was able to stop them as they were about to administer the wrong experimental drug to several patients. Turns out they had misread the protocol. The mistake would have jeopardized the entire study.

We offer a few hints as to how to prepare for the off-chance that something arises that requires an immediate response.

1. Know the rules of responsible science in advance. Pre-existing knowledge about the types of wrongdoing and errors (see Chapter 2) and the kinds of damage they can cause will help you judge the urgency of the situation accurately. Be sure to carefully review policies related to research integrity promulgated by your institution and federal agencies.
2. Form or join an alliance of colleagues who have an interest in upholding responsible science. Agree to be available to each other should a pressing need for consultation arise.
3. Carefully monitor the relationship between you and those with whom you work. This will not only help preclude research wrongdoing from ever materializing but will also facilitate a more effective intervention if an immediate need arises.
4. Never rely solely on your memory after intervening in a crisis. Document it, including the decisions you made and your rationale for making them. Careful records will greatly assist you, and possibly others, should the event subsequently require a formal review.

We turn now to ways of implementing your decision using either an informal approach or reporting the matter to others more formally. There are indicators as to which might be best, and the next chapter is dedicated exclusively to helping you make that choice.

Chapter 6:

Acting on Your Decision—Which Path to Take?

All that is necessary for evil to triumph is for good men to do nothing.
--Edmund Burke

If you have gotten this far into our guide, you may have decided to get involved in some way (or may be willing to if you are ever put in the position of having to decide). When you stand at the crossroads you will have to make one of two choices:

1. Deal with the matter informally, or
2. Report the incident and relevant information to a higher level (usually within your institution, if the individual of concern works there also).

IMPORTANT NOTE: Your institution may handle the case entirely at the local level. However, if the person you suspect of wrongdoing holds a federally funded grant or contract, and the suspicion involves research misconduct (i.e., fabrication, falsification, or plagiarism), the matter would likely also be brought before the appropriate federal office if the institution believes that the evidence is sufficient to substantiate a charge of research misconduct. See Chapter 8 for more on how this works.

Although we cannot guarantee the outcome, this chapter offers some indicators as to which of the two paths might prove the better choice for you, based on our research and collective experience.

We should first note that the primary purpose of our survey research focused on learning if it was reasonable to encourage researchers to intervene when they learn about wrongdoing and an informal approach appears to be the most appropriate course of action. We needed to ascertain how often informal action occurs, how it plays out, and what risks materialize under what conditions. We not only discovered that informal resolution is often a viable way to minimize the negative impact of irresponsible actions, but also that many researchers intervene in this way. Because so few incidents ever reach higher authorities compared to the number of such incidences reported in anonymous surveys, informal action appears to occur with some frequency and often proves worthwhile.

However, not every situation is right for informal intervention. This chapter will help you decide if you might do better to report what you know to a higher level, after which you then serve only as a potential witness.

Couldn't I just send an anonymous note telling suspects to stop what they are doing? Or maybe just tell others about what I think is going on and hope it gets back to them?

You may well find yourself tempted to engage in a covert act instead of confronting the person directly. You might be tempted to start a rumor, despite the fact that the original content can become unrecognizable as it passes along. Or you might be tempted to engage in more direct but anonymous action, such as sending an unsigned note or relevant document to the individual you suspect of wrongdoing. Any of these acts may lull you into believing that you performed a duty at no personal risk to yourself. However, we strongly advise against anonymous action for three reasons:

1. Things are not always what they seem. An innocent person who receives an anonymous accusation is left to fret. Anonymous accusations, should your suspicions be unfounded, would constitute a moral failure on your part.
2. A guilty violator will no doubt feel disturbed by hearing the rumor or receiving an anonymous communication. However, the reaction may only add paranoia to an already flawed character.

3. Even if the individual is guilty, in most cases the accuser is unlikely ever to know if the situation was remedied or whether the suspected violator just got better at covering tracks, thanks to being tipped off by you.

Which path provided the most satisfaction according to your research? Informal or formal action?

Our survey participants reported no difference in the overall satisfaction ratings between taking informal and formal action, although more satisfaction with informal methods came very close to reaching statistical significance as being more satisfactory. We suspect that many decided early on what would work best for them, given their individual situations.

Chapter 7 will give some guidance for actually engaging in an informal intervention and Chapter 8 will help guide you through taking the matter to a more official level. Even though most of our survey participants who chose to act opted for an informal approach, a small percentage would have started at the formal level had they had a chance to do it over again. We will be offering indicators as to the circumstances under which starting at a formal level would likely be the better choice.

Please help me decide which way to go. What indicators should I focus on?

Each case has unique characteristics. Table 1 presents variables that you should consider. No variable is isolated from any other, which is why we cannot make any solid predictions about how things will turn out. You need to see what makes sense once you consider all that is relevant to your case.

Our list of factors is not exhaustive, and many other rare, idiosyncratic, or random happenstances can have bearing on the best decision. We offer this caveat because our survey participants shared incidents that should have worked out very well, but went very wrong for unforeseen reasons (e.g., the matter was far more complex than it seemed at first, or the person of concern became unexpectedly abusive). On the other hand, in some accounts of informal and formal interventions where the risks were high (e.g., the individual of concern was thought to be difficult or was more senior in the organization), the matter was resolved relatively easily and to everyone’s satisfaction.

TABLE 1¹¹
Considerations in Deciding Between an Informal or Formal Intervention

CHARACTERISTIC	INFORMAL INTERVENTION:	FORMAL INTERVENTION:
Overall advantages	Informal intervention is not bound by strict investigative rules. There is a solid potential for a collegial problem-solving meeting, as opposed to an adversarial process. A problem may be prevented or fixed without the issues becoming public.	Formal intervention is more appropriate for some kinds of issues, particularly more serious and clear-cut ones or when a pattern seems to be at issue. More resources are typically available for handling the matter
Overall disadvantages	You are on your own (maybe with the support of a colleague). The suspected individual does not have to cooperate. If things go badly, adverse actions could follow (e.g., the individual may be more likely to retaliate against, gossip about, or attempt to blame you). Note: You can decide to take formal action later if your case warrants it and you are dissatisfied with the informal attempt.	Formal intervention will probably take more of your time and will likely make you feel more stressed. The suspected individual may attempt to turn the tables and try to blame you or accuse you of “bad faith.” You may risk some of the consequences of blowing the whistle (e.g., social marginalization). The individual may be exonerated if evidence is not sufficiently strong, which in turn puts you in an awkward position.

¹¹ Note that sometimes both options can be equally indicated for your situation. Sometimes one does not seem better than the other because there is risk or challenge either way.

CHARACTERISTIC	INFORMAL INTERVENTION:	FORMAL INTERVENTION:
THE SUSPECTED INDIVIDUAL'S PERSONAL CHARACTERISTICS		
Rational and fair	If you have judged this person correctly, an intervention may go well. Yet one never knows a reaction for sure when another person feels stressed or feels attacked.	Personal characteristics are irrelevant if the act is serious, the evidence is strong, or if an informal approach was attempted but failed.
Difficult (e.g., abrasive, arrogant, abusive)	An informal intervention may prove difficult, but could work if you are respected by the suspected individual, if you are the individual's superior, or if you are perceived as trying to help rather than expose.	The suspected individual is now exposed and could be more likely to put up a vigorous defense or attempt to retaliate unless the discoverable evidence is persuasive.
Ambitious and competitive	Move with caution, as such individuals would feel they have a lot to lose. However, they may fear a formal inquiry even more.	If other factors align (e.g., serious offense and evidence is strong), a formal approach is indicated. Expect a difficult challenger.
Extremely stressed, mentally disturbed, or addicted to alcohol or drugs.	Consider the nature of your relationship. If it is not strong and of long-standing, an informal intervention is probably not indicated. Also consider that promises may not be kept.	This is the safer route, but expect blowback if the individual's problem is characterized by acting out or sociopathy.
THE QUALITY OF YOUR EVIDENCE		
Strong	Strong evidence is important but other factors must be taken into account also (e.g., your position relative to the individual).	Your evidence should be strong and well-documented or readily discoverable in an investigation.
Weak, or circumstantial	If evidence is weak (too weak for a formal approach) and you remain concerned, consider an informal meeting that seeks clarification but makes no accusations.	Formal reporting is risky and unlikely to convince others. Can you obtain and carefully protect more credible evidence?
Others possess the same information/evidence	This strengthened position will likely be helpful, especially if you intervene together.	Additional witnesses will strengthen your formal report.
YOUR RELATIONSHIP AND STATUS WITH REGARD TO THE SUSPECTED INDIVIDUAL		
The individual is your friend	You do friends a favor by trying to help them avoid what could be a serious problem for them, your institution, and scientific integrity.	Realistically, this would be a difficult step to take. But if the act is very serious, if damage is potentially severe, and if an informal approach could not resolve the matter, you must consider formal action.
Your status is the same or higher than the individual of concern	Less risky. Informal resolution is a reasonable approach and should be considered mandatory if the individual is your student or supervisee.	Less risky, although a mentally disturbed or psychopathic person with the same or lower status than you can always make things difficult.
The individual is your adversary or someone you dislike.	An informal resolution is unlikely to go well. You may be too emotionally involved and your motives may well be seen as suspect. If the matter warrants an intervention, you might pass the evidence to someone else (if appropriate) should an informal approach still seem the best way to go.	If your concerns meet the other criteria for formal intervention (e.g., strong evidence), then involving objective third parties (i.e., your institution's procedure for handling research wrongdoing) makes sense. Be prepared for the suspected individual to say you are acting out of spite.

CHARACTERISTIC	INFORMAL INTERVENTION:	FORMAL INTERVENTION:
You see yourself as a victim or are very angry or heavily emotionally involved	An informal intervention will likely go poorly, and we recommend against doing so unless or until you feel you be calm and controlled.	Cool off, consult with trusted others, make sure you have a strong case, and consider making a report. Keep in mind that the accused may continue to make you angry, especially if he/she retaliates.
Your status is lower than the individual of concern.	Move with caution unless you have support from others or very strong evidence. Find someone to consult with.	Move with considerable caution. Strong evidence and support from others are essential.
Not someone you know or work with closely	Assess other factors. (Our survey participants were more likely to get involved with such individuals.)	Indicated if evidence is very strong.
ABOUT YOUR INSTITUTION		
The level of administrative support is high	You may still want to intervene informally if other indicators suggest that this approach would create a better outcome, especially if your evidence is not compelling.	If administrative support for scientific integrity is high and wrongdoing is condemned, risks to you are minimized.
The level of administrative support is not known to be strong or efficient (e.g., little experience with such matters, procedures not well organized)	If the suspected individual is your supervisee, other support is not normally necessary because you can exercise your supervisory responsibility and authority. If support is not strong in other cases, you need to accept that you may be on your own. However, our research revealed what may seem to be counterintuitive. Those who felt unsure of the level of their institution's support were <u>more</u> likely to get involved informally and had a high satisfaction rating!	More risky. If the offense involves scientific misconduct (FFP) and your evidence is strong and the project is funded by a federal agency, you may want to call the appropriate contact at that federal agency for confidential advice.
The administration is known to ignore (or even reward) deviant behavior	You may still be able to accomplish something on your own if other risks are not evident.	Formal reporting is risky. The organization may retaliate against you. You can consider consulting directly with the funder.
The level of administrative support is unclear to you	Get more information; ask your superior what he/she knows about how concerns about research practices are handled; consult with ORI.	It is important to obtain more information before making a formal report so you know what you will be dealing with. It is not necessary or desirable to divulge why you are seeking information at this point.
APPARENT NATURE OF THE ACT IN QUESTION		
Appears to be a first time offense	This is definitely indicated if the suspected individual is a student or supervisee and a possible indicator otherwise.	Indicated if the assumed first-time error is very serious and if the evidence is strong or readily discoverable, and if an informal intervention fails.
May be a pattern of long-standing	Unless the act represents one that is unintentional and can be overcome with training or insight, informal intervention is probably not indicated.	If you can document a pattern, and especially if the act is serious, appears to be intentional, and will have repercussions for your institution and the research record, formal reporting is strongly indicated.

CHARACTERISTIC	INFORMAL INTERVENTION:	FORMAL INTERVENTION:
The act appears to you to be committed unintentionally or from carelessness	This is often an excellent opportunity for an informal solution or consultation, especially if no harm has yet been done (e.g., the study has yet to be run or data published). "Honest" mistakes, which are not legally considered as research misconduct, are also amenable to correction through informal means.	Indicated only if serious harm has been done and if an informal intervention fails. Your institution may not process incidents that appear to involve "honest mistakes" or "differences in opinion," and federal agencies explicitly exclude them from their scrutiny.
Gross incompetence is involved	It is unlikely that an informal intervention can be useful unless the area of incompetence is restricted to a specific technique or other teachable matter.	Indicated for overall gross incompetence in the conduct of research. Evidence should be compelling.
Confidentiality issues pertain (e.g., an informant has shared evidence only on the condition that you keep it confidential)	If you are unable to deal with the matter without violating a confidence, there may be nothing you can do. Remain vigilant for new confirming information that you can share without betraying the confidence or if the agreement cannot later be renegotiated.	Unless some other way exists to make a strong case without violating a confidence, there may be nothing else to do. Remain vigilant for confirming information from another source. Consider attempting to renegotiate the confidentiality agreement. <u>Note</u> : There may be times when it is ethical to break a confidence, such as when someone is in immediate danger.
The act appears imminent but has not yet occurred (e.g., an individual divulges a flawed or unethical plan)	Preventing or correcting wrongdoing before it occurs may be the best use of informal intervention.	Unless potentially catastrophic, formal reporting is unlikely to be the correct format as nothing has yet happened. Existing investigatory systems do not address prevention. The suspected person can deny any future intentions.
When the act is of an extremely serious nature (or has serious consequences for research participants, the institution, or you)	An informal approach is not indicated. But if the matter is something dangerous that you can correct quickly, informal intervention on the spot is best! This may be followed by a formal report.	Unless it is an emergency situation, a formal intervention is indicated, taking all else into consideration, especially if the alleged offense involved research misconduct (i.e., falsification, fabrication, or plagiarism).
YOUR PERSONAL SOURCES OF SUPPORT		
Strong support from family or friends	Support from those close to you will provide emotional strength. But these people are not likely the best choices for consultation regarding what action to take.	Support from those close to you will provide emotional strength. But these people are not likely the best choices for consultation regarding what action to take.
Strong support from your collegial confidants	The fact that others support your perspective enhances the validity of your concerns. Social support can be emotionally sustaining even if an informal intervention does not go well.	Knowing that you will have support from others is emotionally sustaining through your role as an accuser during the inquiry.
Little or no support from colleagues and others	If those with whom you have confided are not supportive, why not? Review the matter again to ensure that your motives and evidence are valid.	This is not a good sign. You will not likely get support from the recipients who will formally review the matter if you have not been able to garner support from trusted colleagues.
Your own time and emotional resources	Informal interventions usually take far less time and can be less stressful because no formal mechanism is involved. If the interaction goes very badly, then things have the potential to get more complicated.	Prepare to devote time to this process (even though you do not have control over it) and anticipate some level of stress. Courage and a commitment to scientific integrity are sustaining.

CHARACTERISTIC	INFORMAL INTERVENTION:	FORMAL INTERVENTION:
YOUR OWN WELFARE		
Your degree of control of the process	Informal intervention allows for considerable control of the plan and how the suspected individual will be approached. How the individual will respond, however, cannot always be predicted.	The institution will take over the entire procedure. You may be called as a witness. The accused will be offered due process, and may have his/her own witnesses and hire a lawyer.
Expected level of stress	Stress can range from mild to severe, taking other characteristics into consideration, but, overall, is likely to be less anxiety-producing than formal reporting.	Stress is likely to be moderate to high, especially if the matter takes unexpected turns. Anxiety is likely to be lower if you institution has a no-tolerance policy towards research abuses.

I found the reference to your data about going ahead with an informal intervention, even if the institution was not supportive, intriguing. Why would people intervene when the institution might not be there to back them up?

It appears that some of our survey participants became extra-active informally simply because they did not perceive that the institution would do its job. This happened more often than we expected. And, as noted, many who did intervene when they were unsure of their institution's commitment or ability to be effective were rated their experience as satisfactory. Perhaps they were especially proud of themselves because they acted alone. Or they may have prepared much more carefully knowing that they were on their own. Here are examples of this phenomenon:

I work in one of those places where dishonesty is tacitly approved. The one making waves is the one who will get the boot. I just cannot stand by and watch some of the crap that goes on. I'm not the most popular guy here, but everyone in the lab knows that I watch and will call them on poor procedures, sloppy work, and anything else. It has crossed my mind that I am not hassled because I know too much and monitor their actions.

He is a cheater. I and several others knew it. But he has gotten away with it because the agency turns a blind eye to such problems. The administrator really would not know how to handle such allegations. So we confronted him ourselves. He knew we meant business. He resigned a month later.

She spruced it up some and tossed in a few new references. But basically she plagiarized much of her grant proposal from an old article written by others. I knew the hospital would be embarrassed if the review panel noticed, but I also do not trust the administrators to deal with such problems effectively. They have let things slide in the past. If I didn't call her on it before it went to the funding agency, no one would. I approached her and she withdrew her proposal.

We can only speculate about the personal style of these interveners, since we did not assess it directly in our survey. But, based on how they conveyed their stories it appeared that this group of interveners was composed of senior, assertive, and self-confident individuals who were absolutely unwilling to let what they perceived to be research wrongdoing go unchecked.

Fortunately, only about 5% of our large sample was concerned that their institution would not be supportive. However, acting alone and informally in an unprotected environment is also obviously risky. You should do it only after very careful consideration of your evidence and other ramifications, including

an acceptance of possible failure and its consequences. (More about public whistle blowing appears in Chapter 8.)

Table 1 suggests that it can prove risky to deal informally or formally with someone of higher status than you. So what are students and other people who are junior to the suspected individual to do?

We fully recognize that the risk to those who are junior to the suspected individual may be too great to act on what they see or know. Several possibilities can be considered, although they are indirect and may serve more to prevent future acts than solve current problems.

However, if appropriate, junior people can share information with someone in a position to step in and stand with them. This will not work for every situation, especially if a junior person is the only one who has observed or has collected evidence but is unwilling to be named, or if the risks are high and the suspected individual could identify the source anyway. Sometimes another more powerful person can be given the evidence and go with it without involving the junior person at all.

Can you give an example of that working out?

When I was a graduate student, I stumbled quite by accident across an older article that was almost the same as one that appeared in a more recent journal. The author of the recent version was one of the professors in my department. I shared it with my advisor under the condition that I would never be identified. My advisor later told me that it had been taken care of and that the professor had been appropriately sanctioned.

The above case was easy to manage because the actual identity of who discovered the plagiarism was irrelevant. The evidence spoke for itself.

Sometimes it worked out this way:

I told my superior what I knew. She listened and said she would see if she could come up with the same information on her own, based on my rendition of how I found out. She did. So I never had to be involved.

Preventive actions can be safer for junior people to take. These might include actively seeking opportunities to talk about research ethics and the responsible conduct of research. For example, lab meetings should be held often (weekly, ideally), and a discussion about different elements of responsible and irresponsible research could be a standard agenda item.

You mean I could just try to set that up?

Yes. Generate interest. Here is how two survey participants did it when they first started out.

I thought that some of the work was being done in a haphazard manner and that bad data were contaminating the data set. But I was so low on the totem pole back then that I couldn't be direct about it. I did go to the department chair and express my interest in research integrity, suggesting that it would be something worthy of regular discussion. He readily agreed. I think I saw improvement after we started talking openly about careful research and related topics. I like to believe that it was cause and effect.

My lab was so intent on supporting a particular theory that some were "cherry picking" data that would support it, and ignoring important alternative explanations. I proposed that "brown bag lunch seminars" be open to anyone in the university in related fields who could say things like, "In my field, here is how we would interpret those findings" without making people defensive. Within a few months of these seminars, my colleagues' eyes were opened to new interpretations and fresh approaches were being taken.

Another survey participant decided to create a display on research misconduct for the medical school's annual poster session as a way of shining a bright light on the subject.

I suspected that something was going on with one of my colleagues, but he had been at the school for many years and held a much higher rank. So I created a poster. Lots of people dropped by my poster, which gave me an opportunity to discuss the consequences of research misconduct. My goal was for them to pay more attention to what was going on around them.

Can things go very wrong?

Informal interventions that turn out badly may involve a botched approach (e.g., accusatory), a non-responsive or angry reaction, rejection, ostracism, or appearing on the gossip circuit. Our survey research indicated that these outcomes were not the norm, but they do occur.

For formal reporting within one's institution, the matter becomes more prescribed and the suspected individual and the alleged wrongdoing become an institutional matter. Sometimes things are not handled equitably, competently, or in a timely manner by the institution, which can cause the accuser considerable grief. This is why we advise you to make sure your institution has a sound operation in place before formally reporting a colleague. Sometimes the accused, who now may have a lot to lose, attempts to retaliate or cause some form of trouble for the accuser. Being sued becomes a concern, although our research did not reveal any instance in which threats actually materialized. However, evidence should speak largely for itself before going the formal route to avoid threats or to prevail in any legal action taken by the accused. Chapter 8 discusses unsatisfactory outcomes further

Of course, I want a successful outcome. But what does "successful outcome" mean?

Our research asked only general questions about outcomes. It became clear to us that success had different meanings to different researchers and in different contexts. Most of the time "successful" meant that no or few ill effects befell our survey participants when they attempted to intervene, regardless of whether the problem was fixed or not. More specifically, successful ratings usually had one of the following meanings:

- Problems were prevented/solved or damage was controlled, and the survey participants received appreciation for their efforts.
- Problems were prevented/solved or damage was controlled, and survey participants suffered no negative consequences for their efforts even though they may not have been positively rewarded for their actions.
- Problems could not be fully resolved, but the survey participants managed to effect damage control and suffered no negative fallout.
- Problems were not/could not be ameliorated, but our survey participants did not regret getting involved with trying to solve them.
- Our survey participants were put through an anxious/difficult time, but things ultimately turned out in a way that benefited science or ameliorated the problem, which ultimately felt satisfying to them. In short, the trouble felt worth it.

We also asked our survey participants how satisfied overall they were with the outcome of their attempt to intervene. Thirty-nine percent of the incidents were rated as either satisfying or very satisfying; 27% as neither satisfying nor unsatisfying; and 35% as unsatisfying or very unsatisfying. Those who were dissatisfied tended to be involved in cases where the suspected individual either denied the problem or did not do anything to correct it. Interestingly, the most satisfied group of all were those participants who learned that their suspicions were incorrect, followed closely by those whose intervention resulted in solving the problem.

Chapter 7:

Taking Informal Action—Strategies to Consider

Action may not always bring happiness; but there is no happiness without action.
Benjamin Disraeli

If, after reflecting on the caveats outlined in Chapter 6, you believe that an **informal intervention** is the best choice, the first move is to plan your strategy for approaching the individual(s) involved.

The ideal informal resolution results when an intervention meeting can take place *prior* to the commission of a wrongdoing. But, often enough, you will be responding to an already ongoing, problematic situation. Sometimes, the appropriate action involves simply encouraging the individual to cease what he or she is doing, even if no harm has yet occurred. When a researcher lacks certain competencies resulting in poor quality work, the best course of action may be to promote additional education, supervision, or adding needed expertise to the project. Often the solution will require that the offender (or potential offender) do something differently, coupled with an attempt to redress any damage to the research record, participants, or someone's reputation.

Informal intervention has some significant advantages. As noted in Table 1 in Chapter 6, you would not be bound by strict investigative or procedural rules. Informal interventions can usually be more relaxed and pleasant when approaching a person of concern. Here are examples of how that can go:

He was purposely cutting corners in a way that would bias the data, but I decided to play dumb. I decided to tell him that I was puzzled about his method and that I had learned to do it another way that was more difficult but that would work out better because it would eliminate a possible bias. I then did a little flattery by adding, "You do such important work, so I would hate to see anyone criticize it." He had to admit that I was right, and now he knew that I knew. I made a point of dropping in later to ask if I could help, and satisfied myself that he was doing things correctly.

My friend was going through a rough patch, and he confessed that he was plagiarizing some of his paper to get it done before a deadline. He said he knew it was wrong, but because of the way he was pasting things together, he doubted he would be caught. I was able to talk him out of doing it by suggesting that we have nothing if we lose self-respect. He missed the deadline, but later he told me that I was right to call him out.

I caught my assistant red-handed cooking our data to slant the findings in the hypothesized direction. She told me that she was just trying to be helpful. I told her that this was the worst thing she could possibly do to help. We had a long talk about science and truth, and she promised never to do anything like that again if she could just keep her job. She was very young, so I let her stay but monitored her work more carefully. No more problems have surfaced, and almost a year has passed.

In about 10% of the cases our survey participants helped the suspected violators save face. Although we cannot assert that these cases had a successful outcome, the tactic may be useful because it may preserve the suspected violators' dignity.

I was quite sure that he had rerun some tests several times by selecting what data he wanted to include, and reported only the outcomes that he liked. I decided to try to approach him in a way that wouldn't be too upsetting. I didn't think what I planned to do would work, but it did. I made an appointment and said, "I hate to be the one to tell you this, but I found a bunch of additional data in our computer files that I don't think you had a chance to see. We will need to add that in

before we do the analyses.” The astonishment on his face was priceless, but he did add all of the data. Our study may not have been as exciting as we had hoped, but it was clean.

Always remember that the real story may differ somewhat from what it seemed at first, but you can still accomplish a positive outcome. Consider this example:

I noticed that she was writing up some of her cases that didn't seem to jibe with the questions the patients were being asked. At first I thought she was cooking the data, but I wasn't sure. She seemed embarrassed when I pointed out that there appeared to be misinterpretations, and explained that her English was still a little rusty. We realized that we had not fully explained things in a way she could fully understand. We also found an assistant to help her.

How do I get started?

First, get yourself into a helpful mindset. You are not a judge and jury, standing ready to accuse and exact punishment. Any tone of arrogance or righteous indignation will likely result in a failed intervention. Your tone will be different depending on the status differential between you and the suspected violator. If the individual is your supervisee or student, an authoritative approach is legitimate. But in any case, try to regard your intervention not as an attack, but as an attempt to solve a problem and assisting a person to help him or herself to do things right.

One useful finding in our research was that when the concerned colleague believed that the error may have been unintentional, the success of the outcome was much higher. We suspect it was the way the individual was approached. It was probably calmer and involved requesting clarification as opposed to coming off as suspicious and critical. If you are appropriately sincere, some form of reassurance that you want this matter to be resolved amicably might set the right tone, especially if the problem is relatively minor and solvable. Here are adapted stories from our participants illustrating this approach:

I have known her for 28 years and believe that she would not knowingly cause harm to anyone. When I approached her, she was sincerely surprised that one of our colleagues felt betrayed by her use of his material without proper attribution. We went together and explained the situation to her. She apologized for what she said was an inadvertent error. My colleague seemed to be reasonably satisfied with that.

I was the statistician for a large study involving multiple measurements on over 1,000 individuals. The PI asked for comparisons that would have substantially inflated Type I errors resulting in false positive results. I was nervous at first because he was a brilliant statistician in his day, but I did go ahead and make an appointment to mention my concern. His simple response was, “Thanks, that’s what I hired you for.”

Remember that you want to understand the suspected individual’s motives and actions as best you can from his or her perspective. That will go a long way toward understanding what stands the best chance of producing the most effective outcome. True, things may not turn out as well as in the scenario below, but it provides a good example of the use of empathy and understanding.

I knew that he was having some problems. The scuttlebutt was that his marriage was falling apart. I also recall his saying during a quiet moment we shared once that he never became the scientist he wanted to be and that it was too late now. So I knew he was fragile and perhaps a little desperate. I think my demeanor suggesting caring and sympathy is what allowed us to have a very good talk. He decided against submitting his dressed-up but very quickly and poorly executed project. I suggested some alternative ideas for projects, and now we are working on one together. I trust him now, and vice-versa. His mood has even picked up.

How do I go about approaching the individual about whom I have concerns?

Contact the individual privately and ask if you can meet at the earliest mutual convenience. An office setting would normally be more appropriate than a home or restaurant, even if the colleague is a friend. Try not to be overbearing or mysterious. If the person asks why, try something like “I need to discuss a project with you,” or, “There is something I’d like to go over with you.”

We do not recommend attempting to handle such matters on the phone unless geographical barriers preclude a direct meeting. Letters create a record but do not allow for back-and-forth interaction and observation of body language and emotion. We do not recommend e-mail for the same reasons, as well as the additional concern that electronic communications may allow unauthorized others to gain access and who may even start passing the material around.

Should I go alone or take someone with me?

This can be a mixed bag. If the suspected individual perceives the meeting to be “two against one,” he or she could become very defensive. However, a partner does provide a witness to corroborate what took place. If you do take someone, start off very gently to minimize defensiveness. If you are approaching two (or more) individuals simultaneously, then taking someone with you may be a wise decision. One of our survey participants who did meet with two individuals claimed that the content of the meeting was later greatly distorted by the other two.

This decision will also largely depend on your status relative to the suspected individuals. If the individuals are under your supervision, you probably do not need an ally unless the matter is more serious, or the individuals themselves are potential troublemakers, or long-term consequences of the transgression are likely.

An interesting finding from our survey is that those participants who did bring someone else along to an informal meeting were likely to rate the outcome as more successful than those who went alone.

If you take someone with you, it is better if this person has a connection to the case or at least a legitimate stake in the outcome. Here are some people you should not take to such a meeting:

- Anyone who will take over the conversation without having sufficient involvement in the matter
- Anyone who is likely to become too emotionally involved and might therefore escalate the tension
- Anyone the suspected individual already dislikes or with whom he or she has experienced negative interactions in the past
- Anyone who might threaten the individual (e.g., someone with an unpleasant disposition or bad temper).

How do I start this off? What do I say?

We suggest beginning by expressing your concern and possibly offer a potential way out (e.g., “Maybe I’m missing something, but it seems...”). Unless you are the individual’s supervisor and the evidence is overwhelming, try not to sound accusatory by leaving open the possibility that you may have misunderstood.

After the opening, state any questions and concerns clearly and indicate what evidence you discovered.¹² You should have already thought about how you are going to present your opening based

¹² A reminder. If the suspected transgression has very serious potential ramifications, you should not approach the individual on your own and should not share the evidence with anyone except those who will conduct a formal inquiry.

on other factors (e.g., how well you know the individual, the status differential, the seriousness of the suspected wrongdoing, whether you believe the wrongdoing was unintentional or intentional, and so on.)

We cannot provide a script that would be appropriate for every case. But we offer some ideas. Note: If the suspected individual is your supervisee, you can legitimately be more forthright than the suggested process we will describe here.

Let's say that you and a colleague—we will call her "Midge"—have decided to submit a grant proposal. The day before your first scheduled meeting to map out the application, you receive an envelope in your mail box containing a copy of a five-year-old unfunded grant proposal submitted to the granting agency by someone else. Attached is Midge's note that reads, "I served as a referee on this project. It didn't get funded, so we can use a lot of it for our application."

You are taken aback by Midge's disregard for the work of others. Fortunately, you have a little time to think. You don't know Midge very well. You decide to approach her gently by asking a question because you are not quite sure she understands the inappropriateness of her brief note, at least the way you are interpreting it.

At the start of the meeting you say something like,

"About that grant proposal. When I served on review panels, they said that we had to agree not to use any of the information for our own purposes and were to destroy the original material as soon as the review ended. Isn't that your understanding? And just because the application was not funded, I don't think that we can copy directly from it."

Note that this is a question and not an out-and-out accusation and that the use of the word "copy" replaces the more formidable term "plagiarism." Also, especially in the initial meeting, using terms such as "I don't think" can blunt the edge in what you say.

Midge's answer will be revealing and help you with your next step. You should think about the variations beforehand, based on the predictable range of Midge's reactions. (Remember how we encourage concerned researchers to attempt to get in touch with the suspected individual's possible motives?) Here is a wide range of Midge's possible responses:

That was the first and last time I ever reviewed. The proposal was so interesting and I forgot about what we had to agree to. I didn't mean we would copy it. I meant just review it. I'm sorry.

Here Midge seems naïve. It sounds like your conversation will readily embarrass her into doing the right thing. If you still feel comfortable working with her, you could proceed with a degree of confidence that Midge has learned a lesson.

Or she might respond:

Look, everybody does it. Don't you? There are so many good ideas out there. Why waste them?

Here Midge seems the cynic who believes everyone else may sometimes cheat, or is at least using this as her rationalization. You can express your concerns and see if you can come to another agreement. Here you may opt out, assuming her stance reveals her as someone with whom you do not want to work. Unless you have evidence that Midge goes ahead and plagiarizes the proposal of another, there is nothing further you can do. You can only hope your comments had a salutary effect on her. You might warn her (depending on other dynamics) that you might have no other choice but to report her if she does plagiarize the application. You might also warn her that the original author may be keeping up with the field and notice the misappropriation. The subtext: there's a good chance you'll be found out!

Or Midge might respond,

This is a matter of priorities. Helping abused children is more important to me than following some rigid proprietary rules. That proposal wasn't funded even though it contained good stuff. Ours might get funding.

Here Midge plays the advocate for a noble purpose, appealing to a higher cause. One can understand such motivations, but following ground rules is important as well. If she goes ahead and others find out about any plagiarism, it could be difficult for your institution. You should warn her about that.

Or Midge might say,

I know. I'm sorry, but I'm desperate to put together a winning proposal. My whole life—my research program, my career, my marriage—hangs in the balance.

Midge feels trapped as a victim of the “publish or perish” science game and is failing in her personal life. She will be a difficult collaborator. It is tough to imagine her doing dependable and high quality work anytime soon. You could try to turn her around and continue working with her. Or you can opt out. But if she goes ahead and others find out about this, it could be difficult for your institution. Again, you might warn her that if she does plagiarize the application you have no other choice but to report her.

Or Midge might scream,

You don't like what I'm doing? Find another collaborator and keep your mouth shut.

This scary Midge sounds ruthless. She seems perfectly comfortable with corrupt behavior and thinks she can intimidate you. This is obviously not someone you want to collaborate with, and you should tell her so and why. You should, at the very least, discuss the incident with your superior.

Or Midge might say,

Where have you been? Sam [the department chair] collects all the proposals we bring back and stores them as an archive for us to draw upon.

Now you may not want to go to Sam for support. However, if your relationship with Sam is good, it might be that he is unaware of the policy to destroy unfunded applications. If you have reason to believe that Sam is complicit in wayward practices and condones plagiarizing old grant proposals, you must consider a different coping strategy. You might go to Sam and say something like, “I’m confused. Midge told me you ask grant reviewers to bring back the applications for storage, but when I reviewed the instructions they say to destroy them.” If Sam backs Midge, the matter could get sticky and you may need to consider taking more formal action or exit from the entire situation.

Or Midge might respond,

Look, I hate this job. I really don't give a damn about academic research and can't wait to get out of here and back to industry with better pay and shorter hours. I will be applying for another job as soon as I can show them that I can attract money.

Here Midge confirms that she is definitely the wrong employee for a research role and for the institution. She just wants to buy success and get into a more lucrative job. She’s using you. Stay away, and report her if she goes ahead and plagiarizes.

Or, finally, she might screech,

Don't threaten me with your fancy talk! You are trying to ruin my reputation. I'll sue you if you keep this up.

Looks like Midge is vindictive, highly stressed, or even mentally unbalanced. She may become a serious menace to you and the research environment. Consult with a supervisor.

Notice how differently you would respond based on each of these possible initial responses. You may well want to back away from working with *all* of these “Midges,” and you may or may not go any further with attempting to get her to play by the rules. But with new information about suspected violators’ motives, you stand better prepared to deal with the matter appropriately.

You might be able to persuade the naïve person, the cynic, and the advocate—the first three “Midge” responses listed above—that they run a high risk of discovery and a ban from submitting future proposals by the agency and still work with them. As for the rest of the Midge responses, you need to think about how far you want to push it now or wait to see what she does and report it later if she goes ahead and plagiarizes. And always remember that you may have gotten your intended message through to all of the “Midges,” even if there might be no indication of it at the time.

What happens after the individual knows why I am there?

Take the necessary time to listen to his or her response. If people feel sure that you listened to them, they will feel more amenable to listening again to you. Be prepared for the possibility of a display of considerable emotion. The person may become flustered and repetitive. Allow the individual ample time to explain and defend his or her position in as much detail as required. Be patient.

You need to remain calm and non-threatening to minimize escalation. We suggest soothing language, such as seeking clarification. It will always prove wise at the onset to allow an explanation rather than provoke anxiety.

He was so upset when I expressed my concerns. I let him rant for a few minutes. Then I said, “Look, of course this is upsetting. I wasn’t happy about having to come here. But I wanted to talk to you and see if we could find a solution rather than going to anyone else. Can we work this out more calmly together?” He changed after that, and we worked the matter through. It turned out that things were not quite as bad as I suspected, but they were also more complicated involving a couple of other people. He came up with an acceptable plan to diffuse the matter.

If a reasonable dialog does not ensue, try something like:

I want you to think about everything I said. I'll get back to you again soon and maybe we can talk some more.

If that does not meet with an agreeable response, or if the individual is hostile, you may have to say something like:

I am disappointed that this discussion did not go as well as I had hoped. I will have to think more about my position. Please contact me soon if you would like to continue talking about this.

This may or may not work. We have stories going both ways. If you are asked to return, continue to maintain an attitude reflecting a willingness to solve the problem. If you do not get a callback, you need to decide if you should go to a formal level now. If so, consider whether or not you should inform the individual that you will be moving ahead. In some of our reported cases, the individual reconsidered an informal meeting after learning that the concerned colleague was not going to let the matter drop.

In the worst case scenario when an attempt to intervene goes poorly you will indeed have something to think about. Should you be content with the fact that you tried your best to get through to someone? And maybe you did. You may never know. Should you elevate the matter and make a formal report to a superior or the appropriate office in your institution? If the matter is significant and your evidence is strong, you should seriously consider an official response. About 14% of our survey participants either started with a report to the institutional local office or took it there after an informal intervention failed. (The next chapter covers how to report an allegation to an appropriate institutional office.)

What if the individual turns really nasty?

This can happen, though it appears not to be the norm. We cannot be sure how the incident below actually went. It is possible that the concerned colleague was indelicate in his approach to the individual of concern. Regardless, the intervention went poorly.

I thought that he would be OK with me telling him that rumors about his lack of attention to detail in his data gathering. I thought I explained myself well. But he flew into a rage and ordered me out of the office and said he would never speak to me again and to mind my own business. Things have been cold between us ever since, and that was a year ago. I am not sure that my message ever sank in.

We have a few reports of abusive individuals becoming more cooperative after having reflected on the matter for a while. It would probably prove wise to have another consultation with a trusted colleague at this point, especially because the matter ended on an unfinished and sour note.

Would a hostile suspected individual retaliate against me?

This is possible. But remember that this person also recognizes that you know something and may have allies, so retaliation might be a dangerous move

Please share more examples of informal attempts that did not turn out well for the person who intervened.

Our encouraging data do not, of course, tell the whole the story. Some negative experience (e.g., anxiety, worry, feeling shunned) accrued to the one who intervened in almost half of the incidents. However, many of the negative experiences were defined as “personal emotional toll” *only*. That is, the experience caused some anxiety or concerns, but the concerned individuals suffered in no other way. Here are examples:

I had trouble sleeping and felt sick to my stomach wondering how this was going to turn out. It turned out OK in the end, but it was a difficult period for me. Thank goodness I had support from my wife and my best friend.

Going through this caused me considerable anxiety. You worry if someone who has already been caught doing something wrong will then do bad things to try to wriggle out of a jam. He never did, but I kept expecting it—I was my own worst enemy, I guess.

I knew going in that it was dangerous for a junior person to confront a superior. I could lose my job. But I also get to go home and look in the mirror and like what I see. I am waiting for the second shoe to drop. It hasn't yet, though.

I feel like she manipulated things during our meeting to make it seem as if I made the mistake and am trying to blame her for it. I don't think I went about doing this very well. I don't want to work here anymore anyway. I have already started to look for another position.

What if the individual simply denies my allegations?

This happened in 20% of the interventions reported by our survey participants. Listen to the person's story and consider whether you may have made an error or not. If your evidence is very strong and if the matter will be perceived as serious enough by your relevant institutional office, you may consider a formal report. If your evidence is weak and the matter will not be perceived as serious enough to launch an investigation, consider ending the meeting as amicably as possible. And, as one survey participant who was placed in this situation stated to us, "I will also be watching her very carefully from now on." Also remember, if the individual who rebuffed was guilty of what you claimed, you may have had a salutatory impact. The matter may be corrected, or at least not repeated in the future. Some denials may only have been a way to save face, but the message got through.

Does anyone ever find out that their suspicions were unfounded?

Nineteen of our survey participants learned that their earlier suspicions were in error. These meetings often went well and most were satisfied with the outcomes. Here is an example:

An assistant came to me claiming that her supervisor told her to test patients without getting their informed consent. I questioned my colleague, and he explained that consent had already been secured when the study was explained to them. He showed me the forms. It was just a matter of an unfortunate comment that was misunderstood by his assistant. I said I was relieved and thanked him for meeting with me.

Even though learning that you made the error may not happen often, it illustrates why you want to ask for clarification rather than accuse someone of wrongdoing. Innocent people do not take well to aggressive finger pointing.

What if the suspected individual understands the problem, but it cannot be corrected?

This was the outcome in about 10% of the incidents submitted in our survey. Whatever was done was done and could not be undone. When the impact is apparently minor, a good lesson may have been learned, and the act will not be repeated. If the consequences were serious, perhaps you and the individual can devise a plan to mitigate any damage. Here is an example:

The study was already published when I discovered that his data analysis was improper. When I explained it to him he saw that he had made a mistake. Truthfully, I am not sure that it really was a mistake, but we reran the data and sent the corrected finding into the journal. It all turned out right.

What if the person just never gets back to me after we communicated?

That happened in about 7% of the incidents shared with us. Individual stories revealed different reasons. Sometimes the survey participants were satisfied that they said what they wanted to say and felt OK with leaving things that way. Others felt frustrated, ignored, and disrespected. Some felt sure that they had gotten through to the people involved and that the problem was resolved, even though they did not receive any feedback. Finally, some had elevated the matter to the formal level, meaning that they may not have been privy to the outcome because of confidentiality constraints.

What if the problem doesn't get corrected after I inform the suspected individual?

That happened in about 14% of the incidents shared in our survey, but these were also often the same individuals who also denied the problem.

Were any of your survey participants happily surprised when the suspected violator admits a mistake and is interested in knowing what should be done about it?

Recall that the good news from our survey results is that 447 corrections, thanks to respondents taking some form of action. Another way to look at it is that 28% of those who reported intervening in one or more incidents had at least one “fix.” Even though that percentage would ideally be much higher, it remains encouraging to learn that many researchers are taking upon themselves to attempt to find a solution.

More good news is that in 1,169 (42%) of the reported incidents, our survey participants claimed to have experienced *no* negative feedback as a result of getting personally involved, *regardless of whether the incident was resolved or not*. This should come as extremely welcome news to those who fear the worst.

So, my odds are then about one in four that I might be able to solve the problem if I intervene?

It’s not quite that simple. As we have noted, we found predictors for better and less successful outcomes. Also, one is not always made aware of whether their efforts were successful or not, so the correction rate could be higher than we were able to discern.

What if I don’t know the person who I am pretty sure committed research wrongdoing?

In this instance, an informal approach will feel more reserved. Many of our survey participants were not in close association with the suspected violator, but took action anyway. It may even be easier to intervene in this case. One of the predictors that interventions would occur was when the suspected perpetrator was not part of the immediate work environment. This probably feels safer. Here is an example:

He worked in the sister facility, and I had only met him a time or two. So when an assistant there told me that he had spent some of their funding on a TV for personal use in his office, I was concerned. I made an appointment to check up on this, and sure enough there was a 40 inch flat-screen TV in his office with cable news blaring away. I told him that there was a rumor being spread that he used grant money to buy it. His excuse was suspect. He said it was actually to be used as a monitor to better view his tables. I tried to help him save face by suggesting that others were misunderstanding that and he should figure out how to replace those funds. He said he would.

Notice how an expression of concern and a willingness to work through the problem cooperatively proved effective even when the individual is not someone you work with on a regular basis.

Two scientists were astounded to see an opinion piece published in a small professional newsletter republished in another small newsletter with the second newsletter’s editors listed as authors. The original authors wrote to the editors, neither of whom they knew personally, pointing out the inappropriateness of reprinting the piece without permission and assigning themselves as authors. The plagiarizing editors quickly apologized and printed a correction in the next edition.

In this case the evidence was conclusive, resulting in fast corrective action.

Remember to make some notes of your informal meeting just afterwards. Record the date and time of the meeting, the gist of your approach, and the salient reactions and responses of the person you met. There is a possibility that a record may be useful at some future time.

The next chapter discusses taking *formal* action, something to consider if informal intervention fails or was never appropriate in the first place.

Chapter 8: Taking Formal Action: An Overview of the Process

Laws control the lesser man. Right conduct controls the greater one.
Chinese Proverb

At times informal intervention is not the right place to start or even a reasonable option. You should not attempt handling situations on your own if they seem likely to break down or carry considerable personal risk. If the suspected offense is extremely serious with the potential for significant consequences, such as data fabrication in a federally-funded project, an informal intervention not recommended.

Going into detail about the formal reporting processes lies well beyond the scope of this guide. These policies are quite detailed and complicated. See as examples, the *Public Health Service Policies on Research Misconduct: Final Rule* and the research misconduct regulation (45 CFR 689) of the National Science Foundation.¹³ However, here we offer a general overview of what you would be getting yourself into if you take formal action as well as some resources to consult for further information. The details of reporting policies change from time to time, so it is important to access the most recent version of the procedures at your institution and, if relevant, the policies of the funder of the project about which you have concerns.

Exactly what do you mean by “formal action” again?¹⁴

For our purposes here, formal action means using the *official* administrative mechanism within your institution to report your allegations against a co-worker.¹⁵ (This is different from making an appointment to speak *informally* with someone higher up in the organization, such as your supervisor or dean.) The stakes are somewhat higher now, so you must have a solid and credible reason and evidence to substantiate that wrongdoing has occurred. Once you make a formal report, you will no longer have control over how the matter plays itself out.

Make sure your institution has a clearly understood and efficient formal procedure for examining research wrongdoing and is committed to using the procedure effectively. If you have reason to believe that the individual purposely committed fabrication, falsification or plagiarism and the project is supported with federal funding, your institution should have already put in place a requirement that you report what you suspect so that your institution can look into the matter, as federal policy demands that it does. These procedures must ensure a fair and appropriate investigation, and make certain that appropriate expertise is available throughout an inquiry and investigation.¹⁶

I am a little confused. Are fabrication, falsification, and plagiarism (FFP) the only acts I can formally report to my institution?

The simple answer is “No.” We would hope that your institution would be concerned about any act that would diminish its reputation and research program. However, if the research in question is federally funded, the institution has special responsibilities. So let’s briefly review what is called the *Federal Research Misconduct Policy* (or “Federal Policy” for short)¹⁷

¹³ http://ori.dhhs.gov/documents/FR_Doc_05-9643.shtml and <http://www.nsf.gov/oig/resmisreg.pdf>

¹⁴ C. K. Gunsalus (1998a; 1998b) has developed an excellent guide to institutional inquiries into research misconduct, from which we have adapted here.

¹⁵ If the individual you suspect is not employed by your institution, you might choose to consult either with the research office at that institution or the involved project’s funding agency before proceeding with a report.

¹⁶ See also ORI’s model policy for responding to research misconduct at http://ori.dhhs.gov/policies/model_policy.shtml

¹⁷ http://www.ostp.gov/cs/federal_policy_on_research_misconduct (or 65 Federal Register 76260)

In late 2000, the White House Office of Science and Technology issued the final version of the Federal Policy. This policy establishes the scope of the federal government's interest in the accuracy of the research it funds and requires all federal agencies and departments that support research to implement this policy. There are over 20 such agencies, and they include the Department of Health and Human Services, the National Science Foundation, the Department of Education, the National Endowment for the Humanities, the Department of Veteran Affairs, the Department of Labor, the Environmental Protection Agency, the Smithsonian Institution, and the Department of Defense, among others. Each policy is unique in that it reflects the purpose and scope of the agency as well as who will handle misconduct cases. All have the same goal of upholding the requirements set forth in the Federal Policy. For example, NSF directs research misconduct allegations to the Office of the Inspector General and NIH directs allegations to the Office of Research Integrity.

Along with creating a uniform definition for the term "research misconduct," the Federal Policy seeks to ensure that there are consistent policies across all federal agencies for responding to allegations in a timely manner, that confidentiality is maintained and safeguards in place to protect the complainants from retaliation, and timely notification and due process are accorded to the accused. Even though federal agencies have ultimate oversight authority, in most cases the responsibility for managing allegations of misconduct is left to the institutions from which allegations arise.

If the concern involved in the report you make falls under the definition of research misconduct (FFP), the institution has an obligation to report it to any federal agency or department that is involved. In such cases, the basis for your charges must be discoverable. You may or may not possess all of the available evidence, but your suspicions must have been reported in good faith. If the institution goes ahead with an investigation, a finding of misconduct must meet certain standards. Specifically, a finding requires that:

- there be a significant departure from accepted practices of the relevant research community (i.e. the humanities, social sciences, or scientific research community);
- the misconduct be committed intentionally, or knowingly, or recklessly; and
- the allegation be proven by a preponderance of evidence.¹⁸

What if the research I am concerned about has not received funding from a federal agency? How does that change anything?

The main difference is that the institution would handle the allegation itself. Federal policy does not limit the authority of research institutions or other entities to promulgate additional research misconduct policies or guidelines.¹⁹ You must, however, first investigate on your own how your institution deals with concerns that are not tied to federal funding. Are there any limits to the types of complaints that will be investigated? What limitations may apply? For example, is there an office or administrator willing to get involved in an authorship dispute? Someone doing incompetent work? Someone being so careless with equipment that a project may be compromised? Will any office in your institution look into a report that a research colleague has a serious problem with alcohol or is mentally impaired in ways resulting in irresponsible research conduct?

What if the research I am concerned about is sponsored, but from a foundation or other non-federal organization or an internal grant?

All organizations providing research funds expect that their money will be used wisely and honestly, although they may not always have their own ongoing monitoring and complaint departments. Instead they rely on the organizations receiving (or allocating) the funds to keep watch. No doubt there is variation in the quality of oversight among recipient organizations.

¹⁸ <http://ori.dhhs.gov/documents/QandA.reg.6-06.pdf> In legal parlance this level of proof typically requires a 51% significance level, the same as required in civil law suits.

¹⁹ See http://www.ostp.gov/cs/federal_policy_on_research_misconduct for an overview of the responsibilities of funding agencies and research institutions.

In the case of an outside funder, you might want to get information from the organization about how evidence of wrongdoing is handled, as some do have mechanisms for reporting certain acts. But most appear to trust researchers to do good work and, by inference, the institution to intervene should evidence surface to the contrary.

The professional organization that represents my field has an ethics code that covers research-related standards and a committee that reviews complaints. Is that a good way to go?

The ethics codes of research-oriented professional organizations admonish their members to adhere to the highest standards. Yet they may not have reporting and adjudication mechanisms to deal with charges that the provisions of the code have been violated. Those professional organizations that do accept complaints and formally review alleged research wrongdoing are restricted to considering only the actions of current members. Furthermore, professional organizations do not have the resources to conduct in-depth investigations. To determine if it would be useful to explore further, you would need to review the organization's ethics code and any procedures in place for addressing those who violate its tenets. A call to the organization's ethics officer or ethics committee chair is the best place to start.

So, what will happen when I initiate a formal report?

Let us assume you have formally approached the appropriate office in your own institution with evidence of research wrongdoing that you believe will distort the scientific record, or bode poorly for your institution, or harm or wrong others. If that office determines that your case warrants investigation, a *formal inquiry* may be opened. Sometimes the responsible individual will gather preliminary information to ensure that an inquiry is indicated. The *formal inquiry* (as opposed to the *formal investigation*) may be somewhat like a grand jury process in which a committee is appointed that engages in fact-finding to decide whether there is a case to be made. Alternatively, the process might be carried out by a single person, such as the Dean of Research. The inquiry will probably involve notifying the person you have charged with wrongdoing (the *respondent* or *accused*), conferring with you (the *complainant* or *accuser*), selecting witnesses and interviewing them, interacting with university counsel, talking with any research sponsors and responding according to their mandated procedures, keeping records of the process, and finally deciding whether to close the matter or hold a *formal investigation*, the next step if the formal inquiry has produced sufficient evidence to suggest that wrongdoing may have taken place. Each institution may do things a little differently, but the goal remains the same.²⁰

If you are called upon to present your case or if you are involved in a hearing, you can go in alone. Or if you feel you need support, take along a level-headed co-worker, a union representative, or a lawyer. You will be discounted if you bring along a spouse or parent or someone who has no role in the matter at hand or who may be too emotionally involved. Things have been known to spiral out of control when a significant other is included in such meetings and tries to defend you based on personal sentiments. This would undermine any credibility you had otherwise (Gunsalus, 1992b).

What do I have to prepare in advance?

We note upfront that the advice we offer here is also applicable to *any* unfunded project or other type of irresponsible science as well as funded projects and acts of suspected research misconduct. First, as noted earlier, make sure you fully understand your own institution's policy for responding to research wrongdoing. Is it different for research misconduct (FFP) than for other types of research wrongdoing? Then you will need to decide (perhaps with the assistance of a highly trustworthy colleague) what information or evidence to include, to whom you make the report, what your institution will do to try to protect you, and what role you would play in the proceedings.²¹

²⁰ For a first-rate example, you might want to look at the institutional policy of Stanford University. See Research Policy Handbook at <http://rph.stanford.edu/2-5.html>

²¹ <http://ori.hhs.gov/misconduct/whistleblowers.shtml>

I also wonder about fabrication, falsification, or plagiarism. Does that mean that every such act, no matter how extensive or under what circumstances, must be reported to the appropriate office?

All forms of irresponsible science can sometimes result in great harms and wrongs even though FFP are the offenses that are reportable to the federal government if its funding was involved (along with violations of regulations that protect human and animal research participants²²). The vast majority of our survey participants agreed that research *misconduct* should be reported to someone. However, some reasonable considerations have to be built into the reportable level of misconduct due to the criteria imposed. Recall that no finding of misconduct will be forthcoming by a federal agency unless there is a preponderance of the evidence that the act was committed intentionally, knowingly, or recklessly and was a *significant* departure from accepted practices of the relevant research community.²³ Although those terms are not defined further, we can infer that unintentional acts and less significant departures from the relevant research community are possibilities that would not result in a finding of misconduct, especially if they appear to honest errors, committed by first-time offenses or otherwise competent students who are still in the process of learning the rules. *Intent* is an important criterion for a guilty finding of misconduct or other wrongdoing, which is not to say that honest errors are not appropriate for correction by concerned colleagues.

Where is the line drawn? And if I don't know for sure, aren't I sticking my neck out?

Matters that clearly do not rise to the criteria in the definition of research misconduct may be handled at the institutional level only, or sometimes even informally if the violation is, for example, the reasonably clear result of a mistake or misunderstanding or involves a minor act (e.g., a failure to attribute a source properly). Such mishaps can be pointed out and corrected in a collegial context. Consultation with an experienced, trusted, and well-informed colleague is indicated to sort out the best option when the matter feels as if it were a mistake or unintentional or a less serious deviation from accepted practice.

If you are reasonably sure that the act met the criteria that would result in a finding of fabrication or falsification because it meets the criteria but you lack sufficient evidence, best to report it to the institution than attempt to approach the individual yourself. If your qualms are correct, the individual will likely start covering tracks.

Plagiarism is usually easier to deal with—you either have direct evidence in hand or you don't. The extent and probable intent still require consideration, and if the purloining of others work was substantial or formed a pattern of behavior it was likely purposeful.

If I go ahead and report what I know, will my institution's office and I work together as a team?

Not in the usual sense. Once you make your formal report and present what evidence you have, you are no longer in charge. Individuals, such as the university attorney, owe a professional obligation to the institution, not to the accused or to you. It is the responsibility of the investigative body to ensure that a competent investigation is carried through to completion and to work with the federal agency if one is involved. The matter is not a dispute between you and the individual you suspect of wrongdoing.²⁴

Do they have to use my name? Can't I just hand in the evidence?

You will have to see if your institution will consider anonymous complaints and, if so, under what conditions. A study by ORI²⁵ found that most policies at the institutions they surveyed did not specify

²² See Office for Human Research Protection (OHRP) "common rule" and compliance here <http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>; <http://www.hhs.gov/ohrp/compliance/>, and reporting requirements here http://www.hhs.gov/ohrp/policy/incidreport_ohrp.html. For animals, see <http://grants.nih.gov/grants/olaw/olaw.htm>

²³ Federal Register. Department of Health and Human Services, 42 CFR Parts 50 and 93. Public Health Service Policies on Research Misconduct; Final Rule. May 17, 2005.

²⁴ <http://ori.hhs.gov/misconduct/whistleblowers.shtml>

²⁵ http://ori.dhhs.gov/documents/institutional_policies.pdf

whether anonymous allegations would be pursued or not. They found only two policies that explicitly disallowed anonymous complaints. NSF will accept anonymous complaints, but cautions that unless the information is sufficiently specific the office may not be able to proceed.

It would be unusual for many kinds of inquiries to take place without the defendant knowing who accused him or her, especially when the primary evidence is the testimony of a witness. In many cases the accused would likely be able to guess correctly who turned them in. It is best to at least be prepared for your identity to be known to the accused as well as to others related to the case.

But, you said earlier not to make any anonymous accusations.

We were referring specifically to *informal* actions. If your institution allows anonymous allegations (or allegations in which you will not be named) some measure of due process still pertains because the suspected individual will be able to interact within the formal process and have an opportunity to be heard and perhaps exonerated. Simply put, there is a big difference between you making an anonymous accusation directly to a suspected individual and remaining unnamed in a procedure that will still allow the accused an opportunity to defend him or herself.

Will I be protected by my institution?

Institutions are obligated to protect good faith allegations. To the extent possible your identity as well as that of the respondent will be limited to those who have a right to know while conducting a complete and competent review. Evidence and records must also be held as confidential for the same reasons, except as prescribed by applicable law.²⁶

It is important to remember that the accused will be accorded due process which exposes you to scrutiny as well. Although there are formal restraints on retaliation, these cannot always protect you from some of the ways you might be treated if you become regarded as a “snitch” among your colleagues. This is why we strongly suggest that you identify sources of support for yourself before acting.

Despite the warnings, our survey findings were encouraging. The proportion of successful outcomes among our survey participants who reported wrongdoing to a higher level (with or without first attempting an informal resolution) was not significantly different overall than informal intervention outcomes.

We are also optimistic to note again that negative fallout due to lack of institutional support occurred fairly infrequently among our survey participants (only 5% of reported incidents). So, along with studying your institution’s research policies, try to assess the level of support you can expect from *your* institution by seeking out general information from others. You might discreetly ask colleagues if they know of any outcomes of previous cases of research wrongdoing and how the administration reacted to the individuals who reported it. No one has to know at this point exactly why you are interested.

What actually happens in a formal investigation?

By the time a formal investigation gets underway, considerable inquiry, notification of the parties involved, sequestration of data, and analyses of applicable regulations will have taken place. The ensuing investigation will have high stakes for all involved, including not only the panel and staff who conduct the investigation, but also for you as the accuser and the accused. As already noted the institution should keep details of the inquiry confidential, but some information (including some information that may be inaccurate) may leak out and become the topic of gossip. In higher-profile cases, or those involving a bizarre or controversial feature, the press may eventually become interested. The accused party may retain a lawyer, and you may also want to seek legal counsel in order to present your case effectively and to protect yourself from any attempt to shift blame on to you.

²⁶ ORI Sec. 93.108 Confidentiality. http://ori.dhhs.gov/documents/FR_Doc_05-9643.shtml from the final rule.

Those charged with conducting the investigation will seek any information they consider relevant, including conflicting views on what happened. There is some disagreement about what constitutes accepted scientific practice. Hence, what one person considers serious misconduct, another may not. One way to determine if the incident is serious, or potentially so, may be to analyze how the scientific record may be corrupted or who might be harmed or wronged. Here is one example adapted from our survey responses that was eventually investigated by the university and later reported to the federal funding agency.

Because my complaint to the administration did not meet the traditional definitions of falsification, their first reaction was to dismiss my concerns. However, when I laid out how his reckless incompetence and disregard for managing the data, coupled with how he failed to supervise his poorly trained assistants resulted in reports that presented findings as unclear as any fabricated data, they began to listen.

Out of the information-seeking phase institutions must develop a report, which must be submitted to any relevant federal funding agencies if acts meeting the definition of research misconduct are involved (or other funders requesting that such reports be made to them). The reports typically must contain the procedures used in the investigation, summaries of testimonies, how the decision was made and the basis of the findings, and any sanctions the institution imposed on the accused. But interfacing with the funders will be the responsibility of the institution.

What do they do to those who are found guilty?

The local institutional investigation panel may or may not produce a finding of misconduct or other form of wrongdoing. If it finds wrongdoing, it must then decide on a sanction. Along with the extent and seriousness of the offense and the damage it caused (or could have caused) to the research record or research participants or other researchers or the public, other factors are taken into consideration. These include whether the action was intentional, or was a first time offense (as far as anyone can tell) or a pattern of wrongdoing. The level of cooperation and perceived truthfulness of the respondent, the willingness of the individual to accept responsibility and likelihood of rehabilitation, and other idiosyncratic extenuating circumstances are also taken into account.

Specific institutional actions might include a letter of reprimand or limitation of the person's academic roles (e.g., restrictions on submitting grant applications and access to facilities). Other sanctions might include supervision or monitoring of future work, mandating the taking of steps to correct the research record, the imposition of special certifications to ensure future compliance, remedial education, removal from the project, or suspension (with or without pay), or termination of employment. The institution will be constrained by its own governance policies and contractual agreements with faculty. The federal government can impose suspension or termination of an active award, and suspension or disbarment from receiving federal funds for a specific period of time or forever.

If the research was federally-funded, reports will be made to the relevant agency or department, and it may become actively involved in reviewing and approving of the findings and sanctions. ORI makes the identities of individuals found guilty of research misconduct public on its Website, which is a sanction in itself.

Are individuals ever found "not guilty?"

Yes, and that is one of the more difficult outcomes for the accuser/complainant. This is why your support systems should be well in place and your suspicions as credible or your evidence as strong as possible. Sometimes work life is made difficult for the individual who pressed an unsuccessful formal allegation. But researchers whose motives were clean can console themselves by knowing that they did, in good faith, what they believed was right for science and their institution.

What exactly is the role of the Office of Research Integrity (ORI)?

The Office of Research Integrity (ORI) does not oversee every federal agency, but it serves as a prime example of how the federal government stands ready to ensure that charges of research misconduct are handled effectively. It is responsible for overseeing and directing Public Health Service (PHS) research integrity with the exception of the regulatory research integrity activities of the Food and Drug Administration. The PHS is composed of the following offices and agencies: Office of Public Health and Science; National Institutes of Health; The Centers for Disease Control and Prevention; The Food and Drug Administration; The Substance Abuse and Mental Health Services Administration; The Health Resources and Services Administration; The Agency for Healthcare Research and Quality; The Agency for Toxic Substances and Disease Registry; The Indian Health Service; and the Office of Regional Health Administrators

Because institutions are often unprepared to conduct formal investigations, ORI will provide technical assistance to any institution receiving PHS funding that is preparing to conduct an inquiry or investigation. It also offers resources for training personnel in institutions' offices that deal with research wrongdoing. ORI will also consult directly with potential complainants regarding suspicions of research misconduct even if the project does not receive federal funds.

The federal government can bar persons and entities from participation in federal programs, such as grants. Therefore, ORI has an interest in determining the appropriateness of institutional processes and findings in formal inquiries. ORI provides considerable information and guidance to institutions and then determines the extent to which it agrees with the actions of institutions in their conduct of formal inquiries. Here is a partial list of their technical services²⁷:

- Providing a rapid review of the institution's procedures to alert officials to potential problem areas
- Assisting in the sequestration, inventory, categorization, and plans for analyses of physical evidence
- Briefing institutional officials and committees on planning, implementation, and identification of potential legal issues in inquiries and investigations
- Advising committee members on investigational goals and techniques
- Handling evidence from human subjects or samples
- Suggesting collateral evidence to confirm or refute claims
- Providing advice on missing records
- Providing advice on forensic expertise and interpreting opinions received
- Assisting in locating outside experts

Can I take a case directly to the Office of Research Integrity, the National Science Foundation, or other funder directly?

If your institution is unresponsive or is poorly set up to deal with such matters, or is too small objectively process complaints, or has no regulations at all (e.g., community college districts) you may want to consult directly with the funding agency.

ORI, NSF, and some other federal funders are willing to listen. They can be helpful in offering advice about the best way to proceed. You may be referred to another resource if the matter does not fall within the agency's jurisdiction. Occasionally an issue can *only* be dealt with at the federal level, such as a violation of confidential peer review.

²⁷ See more information at http://ori.dhhs.gov/misconduct/tech_assistance.shtml

When will I be told how it all turned out?

Prepare for the possibility that you may never be informed of any specifics about the findings or any sanctions imposed if your complaint against the accused was upheld. Confidentiality requirements may preclude the release of information to anyone. So, don't feel left out if you learn nothing after you went to the trouble of reporting, and don't automatically assume without some corroboration that any future adverse decisions about you were linked to your decision to report.

Can you cite positive outcomes when the person went the formal route?

Here are a few examples adapted from our survey responses.

Many of us suspected that he had been plagiarizing some of his work. It sounded too familiar and was too well-written compared to his usual level of communicating. I decided to do the search and found several plagiarized papers. I sent the evidence to the dean, the plagiarizer later resigned, and I was seen as a bit of a hero.

I trusted that my post doc was truthful in reporting that a junior colleague on the project was making up data rather than collecting it. Her description of how it was being done was so detailed, and she was so distraught that it felt very unlikely that she was making up any stories. I had her take notes and make sure that the bad data were kept separate. When I had enough to go on, I took the evidence to our research office. They took it from there. The colleague was found guilty of misconduct and was denied tenure. I made a point of commending the post doc for her courage.

I believed in what I had to do, but I was also very apprehensive. I stuck to my guns and saw it all the way up the line. It wasn't easy, but the article containing fake data was retracted before it was published.

Her long publication record unraveled like a cheap sweater when we discovered that she had plagiarized large sections of her most recent article off the Internet. My RA and I decided to check out previous articles, and sure enough, we found that she had been doing this for years. We took our evidence to our dean and he took it from there. She was found to have committed research misconduct and her contract was terminated.

How about examples of formal investigations that did not turn out well for the complainant?

Some of our survey participants who reported negative fallout experienced disrespectful treatment by colleagues as a result of their involvement. Some felt that their reputation suffered, or that their career may have been placed in jeopardy. In some cases, participants felt betrayed by their institution. A few feared legal troubles, but none of them indicated that this ever came to pass. Here are examples:

Even though I have a copy of some of the original data suggesting that what she presented is not what was collected, she continues to deny that she did anything wrong and had all sorts of excuses that the hospital inquiry team bought. They concluded that the evidence was inconclusive and did not proceed to an investigation. She and I both know the truth, but she got away with it.

I actually believed that my colleagues would be delighted to learn that I probably saved the reputation of the lab. If this thing had gotten out, the *Chronicle of Higher Education* would be all over it. But all they see is that their friend got caught, and they blame me for it.

Is there a difference between “taking formal action” and “blowing the whistle to the public”?”

We choose to make a distinction in this Guide, even though both involve taking the matter outside of your personal control by approaching another entity to investigate your knowledge or suspicions. *Formal action*, as we have used the term here, involves keeping the matter within the local institution to be handled by its mechanism to evaluate and possibly fully investigate the complaint. The institution may, at some point, move the matter to yet another level, such as the federal funding agency. The matter could become public knowledge at some point. But you would not be the one making a decision leading to more exposure.

Public whistle-blowing, as we use the term for our purposes here, involves taking the matter outside of one’s institution and/or the project’s funding source, either right from the start or after being dissatisfied with the institution’s handling of the matter. These outside contacts could include the media, a government official or committee, or an advocacy group. (Note: ORI uses the term “whistleblower” as synonymous with “complainant.” We use “public whistle blower” in an attempt to reduce any confusion.)

Should I ever consider taking what I know outside of my institution?

If you attempted to press your case to a higher level and were dissatisfied with the outcome, and if you sincerely believe that the information you hold is factual and must somehow be aired, then blowing the whistle in a public forum, such as to the media or an outside organization, remains an option. We note up front that based on previous literature things do not necessarily turn out badly. Gunsalus (1998b), Sieber (1999), and Johnson (2003) have proposed that successful whistleblowers are people we never hear about. Almost a third of the whistleblowers surveyed by Lubalin and Matheson (1999) experienced no permanent negative consequences as a result of their involvement. However, we will be forthright about the risks.

Successful whistleblowers—or “ethical resisters,” as some prefer—who have garnered notoriety typically have irrefutable proof that society, or some specific segment of it, faces immediate danger. They also stand willing to risk everything. Under these circumstances, the level of journalistic and public support available may allow a whistleblower to survive, and perhaps earn accolades as a national hero (Johnson, 2003). A recent example is Harry Markopolos, who brought information about Bernie Madoff’s 50 billion dollar Ponzi scheme to the Security and Exchange Commission. Even here, however, years passed before the government finally paid any serious attention to Markopolos’s startling discoveries.

The literature also reveals that the inherent risks in less-publicized opportunities to blow the whistle to the public are numerous and include loss of employment or, failing that, demotion or transfer to some undesirable location or position. If the individual remains in the organization, he or she is often frozen out, even by those previously thought to be friends. There appears to be an underlying, visceral suspicion of anyone who breaks with their organization to “tattle” on it (Gunsalus, 1998a). Those known to be potential informants may have difficulty finding other employment, or they may be accused of acting out of vindictiveness or revenge. Loyalty rather than honesty tends to be rewarded by organizations, thereby creating an ethical ambivalence in those who consider blowing the whistle (Jansen & von Glinow, 1985; Alford, 2001).

What if I decide to go outside my institution anyway, even with an understanding of the risks? What would I do?

Before making the decision to become a public whistleblower, we offer some suggestions. These suggestions are adapted from Koocher and Keith-Spiegel’s (2008) summary of the literature on what to consider before blowing the whistle. But again, make sure that all available appropriate internal resources for solving the problem have been exhausted unless there is a compelling reason for not doing so. Make sure that any act of going public is motivated from good faith and appropriate moral motives as

opposed to seeking revenge or out of anger. Search out one or more support groups as the going could get rough.

The issue at hand must not be viewed as trivial by others. Going public must be for the purpose of preventing unnecessary harm or serious danger to others that will likely result (or is already occurring) unless the matter is brought to light. It is important to determine what persons or public interest would be harmed should the matter remain unchallenged. Evaluate the interest, commitment, and fair consideration you can expect from the outside organization or contact. Remember, once you release your concerns to the public you will lose all control of what happens next. Your desire to remain “off the record” may not hold.

The quality of the evidence should rise to the level of being persuasive to a reasonable person. Your accumulated information must be accurate, strong, and complete. If other parties are central to the case as witnesses, evaluate any assurances that they will stand by you. Reassess any confidentiality issues. If you will be violating any rules or confidential information by contacting outside parties, the risk increases, requiring a particularly serious assessment of the consequences for both yourself and others.

Remember, if you are forced to break a law or violate an ethics code as a condition of employment, the fact that you brought the problem to outside attention would not, in itself, exempt you from also being charged.

You must ask yourself if you are ready to risk your career status, and compare that risk to how you would feel if you did nothing and others were harmed. Would you be forever haunted by your inaction?

If you plan to go ahead after evaluating the above, is anonymity a viable option? Should you resign your position before speaking out? Develop a hierarchy of persons of authority or interested parties who are in a position to act on the information. Then consider where in that sequence your “whistle” will be most effectively heard and heeded. Stay on your best behavior. You do not want to provide ammunition for discounting you as a disgruntled employee or mentally unstable.

As much as we admire public whistleblowers willing to sacrifice everything to protect society, we would hesitate to tell people that they are obligated to put themselves at such risk.

Finally, an organization with the slogan “honesty without fear” is available for a confidential consultation about what you know. Whistleblowers.Org²⁸ provides an online reporting form that will be reviewed by attorneys for the National Whistleblower Legal Defense and Education Fund.

²⁸ <http://www.whistleblowers.org>

Final Word

We will periodically update our guide whenever research, policy changes, needed content corrections, or other relevant information becomes available. But we also want to hear from you about your experiences and ideas that might be helpful in upcoming editions. Please do not use any actual names or violate any confidences. We will not share your identity, and if we utilize your story we will adapt from it and disguise as seems appropriate.

Topics we would like to hear about include but are not limited to:

- How you handled an experience of wrongdoing and any lessons learned
- How your institution has actively responded to research wrongdoing
- What you and your institution do to prevent research wrongdoing
- How your institution educates its members about the benefits of ethical and legal behavior

Note: The content of this Guide and any revisions are solely the responsibility of the authors. This is not an official ORI publication.

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