

ETSU's Guidelines on the Responsible Conduct of Research

Throughout these guidelines you will find links to relevant guidelines and policies by ETSU, the National Institutes of Health, and the Office of Research Integrity.

PREAMBLE

A central responsibility of a university is to promote, encourage, enable, and conduct high quality research. East Tennessee State University is committed to quality research, and to the responsible conduct of that research. The university expects everyone working here—individual researchers, lab managers, technicians, and students—to embody the highest standards of research excellence, to exhibit exemplary moral behavior as researchers. However, It is not enough to hold employees and students to high ethical standards. The institution will actively seek ways (a) to encourage careful thought about our ethical responsibilities as researchers, (b) to reward exemplary behavior and to censure questionable behavior, and (c) to promulgate these expectations to all students and everyone within the university's employ.

To expect less of ourselves is unacceptable.

No written guidelines can specify all the ethical responsibilities of researchers. Our responsibilities will always exceed any guidelines. Nonetheless, we should identify what we now understand as the ethical concerns that should inform our thinking and guide our actions as individuals, as representatives of ETSU, and as researchers. Although these Guidelines cannot and will not give univocal guidance about how we should always behave, they can provide a framework for thinking about our responsibilities. The announcement and distribution of these guidelines can create an environment within which ethical considerations will guide our thoughts and action.

Ethical guidelines are not rules externally imposed on research. Rather “competency in research *encompasses* the responsible conduct of that research and the capacity of ethical decision making” (Committee on Assessing Integrity in Research Environments 2002: 9). That might suggest that we do not need any guidelines on ethical conduct. That is a mistake. When people do not talk about ethical conduct, inappropriate behavior becomes more likely. As Sigma Xi puts it in its powerful monograph, *Honor in Science*, “what is needed . . . is a greater readiness on the part of everyone—students and teachers—to assert and defend the principles of honest behavior. It is only when there is a reluctance to assert such principles that the unscrupulous are encouraged to take chances and to claim that ‘everybody does it’” (Sigma Xi 2000: 9).

Sigma Xi's point is clearly illustrated by the scientific community's official stance just two decades ago. In testimony before the House Committee on Science and Technology, the president of the National Academy of Science, and “the spokesperson for the

scientific community” completely downplayed the importance of these ethical questions (Broad and Wade 1982: 11-13). No more. The scientific community now understands the importance of explicit discussion of ethical issues: most scientific organizations have since articulated rules for the Responsible Conduct of Research.

East Tennessee State University is committed to the Responsible Conduct of Research. We agree with Sigma Xi that “we should strive to develop and uphold standards that are broader than those addressed by the government regulatory and legal framework” (Sigma Xi 1999: 7).

We think it best to characterize our ethical responsibilities as falling into four broad but clearly overlapping, categories. These include our responsibilities (a) as individual researchers, (b) to the profession, (c) to our students and trainees, and (d) to the community at large.

Each of these responsibilities will be encouraged, supported, and rewarded by the university. The university will develop and maintain a “climate and culture . . . that promote and support the responsible conduct of research (Committee on Assessing Integrity in Research Environments 2002: 12).

THE RESPONSIBILITIES OF RESEARCHERS

Responsibilities as Individual Researchers

As the National Academy of Sciences succinctly put it in its Preface to *On Being a Scientist: Responsible Conduct in Research*: “The scientific research enterprise, like other human activities, is built on a foundation of trust” (1995: v). That foundation requires that in framing and conducting their studies, in gathering data, and in disseminating the results, researchers should (a) take due care, (b) avoid bias, (c) honestly report their findings, (d) be cautious in speculating about the significance of those findings, and (e) both take and give appropriate credit for work done. Or, to describe this obligation more broadly, “For the individual scientist, integrity embodies above all a commitment to intellectual honesty and personal responsibility for one’s actions. . . .”(Committee on Assessing Integrity in Research Environments 2002: 34).

Due Care

Researchers should take due care in preparing to conduct their research, whether it be in a laboratory, the field, or a library. Although it is impossible to exactly predict the outcome of an experiment, study, or creative work, we should seek to do quality research that would be a contribution to our fields and a benefit to the public. Researchers should be motivated primarily by a quest for knowledge and not primarily for financial or professional gain. Although these later motives are often present, if they become dominant, researchers are more likely to “cut corners” in their scramble to advance themselves.

Due care includes the requirement that researchers keep meticulous records of their

findings, and, within the constraints of copyright policies, make those findings available for other researchers [[NIH](#) | [ORI](#)].

Although the requirements of due care apply to all researchers, the specific contours of these demands will depend upon the discipline and the nature of the particular inquiry. Research especially likely to impact both specific individuals (e.g., research with human subjects or animals) or society as a whole (e.g., reproductive technologies), generates an even greater responsibility to insure both that the research is significant and that it does not harm either the research subjects or the public at large.

Avoid Bias

As human beings, we are susceptible to various biases. These include any number of pre- or misconceptions which can impair our judgment and skew our findings. For instance, our political, social, cultural, racial, or religious views may make it difficult for us to fully grasp and evaluate those findings. Moreover, we all face potential conflicts of interest between our responsibilities as dispassionate researchers and other personal or financial commitments or interests we have. It is important in research, as in the courts, to avoid even the appearance of bias, to avoid even a hint a conflict of interest.

Concern about conflicts of interest have become especially acute in the current environment in which universities and corporations cooperate and compete. Within that environment, conflicts of interest are more likely to arise, and, if discovered after the fact, more likely to lead other scientists and the public to be skeptical of reported findings. Consequently, individual researchers must seek to avoid situations in which such conflicts may bias their findings. [[NIH](#) | [ETSU](#)] One fairly simple way of doing this is to make any conflicts transparent to the institution, to other researchers, and to the public (Committee on Assessing Integrity in Research Environments 2002: 34).

Bias can appear, often subconsciously, in the presuppositions that guide our research. As the National Academy of Science pointed out, even a luminary such as Einstein was not free of such bias (National Academy of Sciences 1995: 6). Bias can also shape the ways that researchers “massage” the data they uncover. There is no doubt that researchers must sometimes “read between the lines” or downplay anomalous findings when interpreting their data. However, in so doing they must be very careful. They must also respect other researchers (and the public at large) by acknowledging what they have done and why they have done it.

Honestly Report Findings

Researchers must take care in assembling, reporting, and storing data, whether it be the ideas gleaned from their reading or experimental findings in the laboratory. When they cite others, they must cite them carefully, accurately, and without masking or distorting the others' views. They should also keep meticulous records of sources they cite and data they collect, and make such data available for others who seek to replicate or discuss this work [[NIH](#) | [ORI](#)].

This is part of what people mean when they say that honesty is the highest virtue of a researcher. The researcher must be honest in understanding and describing a problem, in seeking a solution, in reporting her findings, and in honestly evaluating—and re-evaluating—her own work. That is why Sigma Xi's *Honor in Science* devotes half its pages to discussing honesty.

Everyone seems to acknowledge that a researcher must never fabricate data. If one does, especially if her actions are either intentional or grossly negligent, then her behavior is subject to investigation and censure under the university's "[Misconduct in Scholarship and Research](#)" policy.

Of course we must acknowledge that there is a difference between fraud and error. However, we shouldn't seek to make too much of that distinction—it is "not a simple one to make" (Sigma Xi 2000: 3). Not only is it often impossible to determine what a researcher did or did not know; it is all too easy for people to rationalize their behavior and treat deceit as if it were simple error (*Ibid.*, 4, 14).

Be Cautious in Speculation

It is not enough to be careful in collecting and storing data; we also be careful in extrapolating from it. If we make grand claims that go far beyond the data—especially if we do not appropriately qualify these claims—then we may mislead others who rely upon our work.

Taking Credit for One's Work

Researchers must always give credit where credit is due: they must accurately cite others whose ideas or methods they use, either in whole or in part. This may seem so obvious as to not require stating. Yet a recent study suggests that researchers often miscite sources, primarily because they themselves have never read them (Editor 2003).

The difficulty is that it is easy to forget (and difficult to see) the origins of ideas that now shape our research. Yet we must be careful unless "self-deception enters into the forgetfulness of borrowed beliefs" (Glass 1965: 1257).

Relatedly, we must scrutinize current academic practices for allocating responsibility—and taking credit—for research. We need to consider what it means for a researcher to have her name on an article, presentation, or book. Is it enough that the person advises the principal authors or provide some data used by the author? Is it appropriate to take even partial credit for the work of one's graduate students, especially if one's "only" contribution is to advise that student? [[NIH](#) | [ORI](#)]

Part of the problem is that current practices make it easy to take credit for a publication, without having to take responsibility for it if it is flawed. This is perhaps most apparent in work with multiple authors.

Multiple authorship . . . can easily become irresponsible authorship simple because it tends to debase the notion of what authorship really means. . . . If the paper contains fraudulent statements, or mistakes caused by carelessness or self-deception of others, it should not have been published and you should not have attached your name and scientific reputation to it as a coauthor (Sigma Xi 2000: 27).

There is no single solution appropriate for all disciplines. However, there is a strong case for saying that no one's name should be listed as an author unless she has made a "direct and substantial contribution to the paper"(National Academy of Sciences 1995: 13).

Exactly what this means legitimately varies from discipline to discipline. Nonetheless, each discipline should carefully evaluate its practices, and be willing to change them if they encourage researchers to give or take inappropriate credit. Indeed, that is exactly what is beginning to happen. Disciplines are changing their standards, in large part, because of the increased concern about the ethical questions concerning authorship. Whereas it was once thought permissible to give and accept honorary authorships, or to be listed as an author if one merely supplied some data used in research, that is no longer acceptable, at least not within biomedical journals. As the International Committee of Medical Journal Editors put it (1997: 40):

Authorship credit should be based only on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. Acquisition of funding, the collection of data, or general supervision of the research group, by themselves, do not justify authorship.

One specific way to operationalize this idea was adopted by the *Journal of Animal Science* in 1984: "All authors . . . must provide a signed affidavit assuring that they have read the manuscript prior to submission and (or) are fully aware of its content. . . . (Sigma Xi 2000: 25)"

Perhaps not all disciplines will go quite so far. Still, if nothing else, disciplines should ensure that the nature of their practices is clear to others, especially university administrators who must judge the relative quantity and quality of different researchers' work, and allocate resources accordingly.

Correcting mistakes

Finally, no matter how careful we are, we will make mistakes, whether from oversight, ignorance, or lack of care. Once we discover our mistakes, we should find the appropriate venue within which to correct them, lest others follow the research paths we

have mistakenly blazed.

Being willing to correct our mistakes is not only itself “an important aspect of integrity in research. . . . How mistakes are dealt with may have an important impact on the ethical climate of a research environment” (Committee on Assessing Integrity in Research Environments 2002: 17).

Responsibility to Other Professionals

Although researchers may work in relative isolation, a researcher's work is not and cannot be wholly independent of the work of others. Academic inquiry is always, in some important sense, communal inquiry (National Academy of Sciences 1995: 3). Each researcher's work builds on the work of others, and, if her work is good, it shapes future research.

Our connections with other researchers are typically more elaborate: within some disciplines, researchers standardly collaborate; within all, researchers formally and informally share their ideas with other researchers. [NIH]

In some fields, collaborative research is not only widely practiced, it has become the norm. “The average number of authors for articles in the *New England Journal of Medicine*, for example, has risen from slightly more than one in 1925 to more than six today” (National Academy of Sciences 1995: 13). When research is collaborative, each researcher has a special responsibility to her collaborators. Prior to conducting research it is wise to identify the expected contribution of each of the collaborators. That, of course, can change as the research progresses. However, it is helpful to have some shared expectations that shape the collaboration.

When the research is completed, each person should be given appropriate credit for their contribution.

Even when one does not formally collaborate with others, one does so informally, by sharing ideas and data, commenting on others' work in progress, etc., or formally, by reviewing a submitted article, presentation, or research grant.

When reviewing others' work [NIH | ORI], the individual researcher faces certain dangers—tensions between her role as a member of the community of inquirers, and her specific goals of advancing her own career, as well as the interests of her institution, research group, or the public or private agency funding their research. Her commitment to the community of inquirers may encourage or even require that she share her work in progress, while her commitment to her institution, research group, or funding agency may encourage or even require that she withhold that information, at least until it is published. There is no clear way to resolve such tensions: thinking about them will not make them vanish. Still, just being aware of these tensions, and discussing them with colleagues, lab managers, and the public at large, may help us

find ways to satisfactorily meet all our responsibilities.

However, these complex issues are resolved, we minimally know that the ethical researcher cannot (while reviewing) appropriate the ideas of another, or use their ideas without giving appropriate credit. [NIH | ORI]

A reviewer, however, has even wider ethical responsibilities. Each reviewer must be sure that she is sufficiently knowledgeable before she agrees to review the work of another. She must also be confident that she has sufficient time and the psychological disposition to carefully, accurately, and fairly evaluate the work of others. After all, rejecting someone's work inappropriately cannot only hinder the academic advance of the author, it can close off others' access to relevant information. Conversely, by inappropriately accepting another's work, the reviewers can hinder inquiry by injecting misleading or ill-informed "information" into the academic debate.

Responsibilities to Students and Trainees

The responsibilities of researchers—especially within the university—also often include special responsibilities to undergraduates, graduates, postdocs, and other lab workers [NIH | ORI]. The researcher's job, in this environment, is not simply to use these people as resources to advance her own career, but, especially in the case of students, to help them advance their careers (Committee on Assessing Integrity in Research Environments 2002: 42).

It is often in a relationship with a mentor, and not merely in the classroom, that many students really learn what it is to be a researcher. Sometimes what they learn is bad research practice: they learn to cut corners rather than to take due care. A responsible researcher, then, must be aware that she is not only undertaking her own work, she is guiding the future work of her students. Unfortunately, instruction on questions ethical is apparently rare in the laboratory. Perhaps researchers' fear that they might be seen as ethical busybodies leads them to avoid openly addressing such issues. If so, that would explain why most scientists, upon entering their respective fields, report that they have had little instruction, either in the classroom or with a mentor, on the Responsible Conduct of Research. Apparently many researchers assume that ethical conduct is like sex—that somehow we just know what to do and how to do it. Thus, it is not surprising that many researchers report being uncertain of their ethical responsibilities when they face especially difficult moral decisions.

Thinking more carefully about our ethical responsibilities as researchers will not only benefit our students, those we mentor, and society; researchers, including senior faculty will also benefit. And according to Sigma XI, they are often the most resistant to guidelines on the responsible conduct of research since "many senior faculty do not believe there are real ethical problems in science and, if there are, it is not their job to do anything about them (Sigma Xi 1999: 27)."

In teaching others about the ethical conduct of research, we can “gain a new appreciation for the importance of [these] ethical issues. . . . In the process, . . . [we can] provide that leadership that is essential for high standards of conduct to be maintained” (National Academy of Sciences 1995: vi).

East Tennessee State University is committed to providing such leadership and in setting high expectations. We will make education, training, and the open discussion of research ethics, an integral part of both our formal and informal instruction, training, and mentoring.

Responsibilities to the Wider Community

Researchers do not work in a vacuum. They do not communicate simply with other researchers and students. They communicate their ideas, either directly or indirectly, to the public. And, if their work is significant, it can affect the public, sometimes profoundly.

We should also not forget that the ultimate end of our research is to provide knowledge to and benefits for the public. Nor should we forget that they support research, in large part because they think it can benefit them. Their support is not just or even primarily by their words, but with their money. The public's support of research is pervasive and substantial. Many researchers work in publicly funded universities, and even those who do not, often have their research underwritten, in whole or in part, by government funds. That partly explains our responsibility to the wider community.

We thus have a responsibility to the public because of their support, and also because our work can directly and profoundly benefit or harm them. It may especially benefit or harm the subjects of our experiments—especially in the biomedical sciences. It may also affect the public by providing information that can either benefit us (e.g., a cure for cancer) or harm us (e.g., the creation of atomic or chemical weapons).

This responsibility to the public heightens the potential conflicts of interests that we, as researchers, face. “The public” is one of many stakeholders who has a claim on our attentions. This responsibility must be balanced with and against a researcher's responsibilities to the professional (to perform her roles excellently), to herself (to advance her career), to her institution or research group (to promote its stature in the academic community or to gain research funding), to funding agencies (governmental or industrial) [NIH], and to the subjects of her experiments (especially human [NIH | ETSU | ORI] and animal subjects [ETSU]). The interests of each group or individual do not always—and perhaps not often—coincide. Sometimes they clearly conflict. The ethical researcher must balance these competing interests. As before, that is best done when the nature and degree of the conflicts of competing claims are apparent to everyone. These conflicts are best resolved in an environment that encourages open, honest discussion between and among researchers, their students, their subjects, and the public at large.

CONCLUSION: THE RESPONSIBILITIES OF THE INSTITUTION

It is not enough for an institution to ask or expect individual researchers to embody the highest of moral standards. The institution must create an environment in which integrity is expected and assumed. The institution must establish clear expectations, and these must be serious expectations—not mere window dressing. The institution must actively encourage—even require—that we all live up to those standards; then the institution must find ways of supporting ethical behavior and censuring misconduct.

Hence, a responsible institution must pay

attention . . . to the task of fostering a research environment that promotes integrity. This report focuses on the research environment and attempts to define and describe those elements that enable and encourage unique individuals, regardless of their role in the research organization or their backgrounds on entry, to act with integrity (Committee on Assessing Integrity in Research Environments 2002: 1).

There is no simple formula for creating that environment. It should include many elements. It must

provide leadership in support of responsible conduct of research. . . . [For instance, it must] develop programs to orient new researchers, . . . to sponsor opportunities for dialogue about new and emerging issues; and to sponsor continuing education about new policies and regulations as they are developed. Furthermore, institutional leaders have the responsibility to ensure that such programs are carried out, with appropriate delegation of responsibility and accountability and with adequate resources (Committee on Assessing Integrity in Research Environments 2002: 41).

In this effort, East Tennessee State University will demonstrate its commitment to the Responsible Conduct of Research by

- finding ways to effectively manage real or apparent conflicts of interest, in part, by making them transparent to other researchers and to the public (Association of American Universities 2001: 1-2). For if everyone knows that researchers will make even potential conflicts of interest public, others will be less concerned that these conflicts will bias the researcher's findings.
- providing education to researchers and to students. This education must be more than just show. We must provide opportunities for intensive education for those who want it, and the institution must create an environment in which people regularly and openly discuss ethical issues in research.

Such education is key to establishing an environment in which integrity is

expected and prized. However, the most effective forms of education are integrated throughout the researcher's experience and the student's years of study (Committee on Assessing Integrity in Research Environments 2002: 84-6). This goal, then, might be best realized by having a number of researchers engaging in serious, sustained study of ethics and ethical issues in research, and then seeking ways of communicating these ideas with students and other researchers in her discipline or laboratory.

- examining institutional structures, and changing those that might encourage unethical conduct. For instance, there is ample evidence that extreme forms of competition may encourage unethical behavior by scientists (Committee on Assessing Integrity in Research Environments 2002: 58). [ORI]
- providing resources (money and release time) for faculty, researchers, and technicians, to attend relevant workshops or courses on the responsible conduct of research.
- finding ways of recognizing or rewarding those who take a special interest in the responsible conduct of research. For instance, it should become one element in each researcher's annual evaluation.
- establishing procedures for people who wish to report misconduct in science, and mechanisms for protecting them from reprisals (Sigma Xi 2000: 29ff).

Sources

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