

Ethics in research

Honesty is the best policy

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Outline

Introduction

American Psychological Association Ethical Standards General principles

Education and Training Consent

Publication

Torture

Conducting research at NU Training courses

On Being a Scientist Misconduct in Science

Ethical Considerations

1. General Ethical standards
2. APA ethical standards
 - Beneficence and non-maleficence
 - Fidelity and Responsibility
 - Integrity
 - Justice
 - Respect for People's rights and dignity
3. NU research requirements
 - The institutional review board
 - Training courses
4. National Academy of Sciences "On being a good scientist"

The American Psychological Association

1. “APA is the leading scientific and professional organization representing psychology in the United States, with more than 122,000 researchers, educators, clinicians, consultants and students as its members.”
2. “The Council of Representatives is the legislative body of APA and has full power and authority over the affairs and funds of the association within the limitations set by the Certificate of Incorporation and the Bylaws, including the power to review, upon its own initiative, the actions of any board, committee, division or affiliated organization.”
3. Represents all psychologists but primarily those in clinical practice.
4. Division 5 for quantitative psychologists, Division 8 for Social and Personality Psychologists and Division 14, Industrial and Organizational each have one or two representatives
5. Divisions of Clinical Psychologists (42), Psychoanalysis (39), Independent Practice (42) , ... have far more representatives.
6. Individual states have representatives as well.
7. As a governing body, it is hopeless and actual decision making takes place with the board of directors.
8. Many academic psychologists view the discussions as reflecting guild issues, rather than the science of psychology.

Ethical Standards for Psychologists APA, 2002 (revised 2017)

The American Psychological Association's (APA's) [Ethical Principles](#) of Psychologists and Code of Conduct (hereinafter referred to as the Ethics Code) consists of an *Introduction*, a *Preamble*, five *General Principles* (A - E), and specific *Ethical Standards*.

The Introduction discusses the intent, organization, procedural considerations, and scope of application of the Ethics Code. The Preamble and General Principles are aspirational goals to guide psychologists toward the highest ideals of psychology.

Adopted August 21, 2002 Effective June 1, 2003

With the 2010 Amendments Adopted February 20, 2010 .

Further amendments in 2017.

Effective January 1, 2017

APA ethics (intro continued)

1. Although the Preamble and General Principles are not themselves enforceable rules, they should be considered by psychologists in arriving at an ethical course of action. The Ethical Standards set forth enforceable rules for conduct as psychologists. Most of the Ethical Standards are written broadly, in order to apply to psychologists in varied roles, although the application of an Ethical Standard may vary depending on the context.
2. The Ethical Standards are not exhaustive. The fact that a given conduct is not specifically addressed by an Ethical Standard does not mean that it is necessarily either ethical or unethical.

APA ethics: Preamble

1. Psychologists are committed to increasing scientific and professional knowledge of behavior and people's understanding of themselves and others and to the use of such knowledge to improve the condition of individuals, organizations, and society.
2. Psychologists respect and protect civil and human rights and the central importance of freedom of inquiry and expression in research, teaching, and publication.
3. They strive to help the public in developing informed judgments and choices concerning human behavior. In doing so, they perform many roles, such as researcher, educator, diagnostician, therapist, supervisor, consultant, administrator, social interventionist, and expert witness.
4. This Ethics Code provides a common set of principles and standards upon which psychologists build their professional and scientific work.

APA ethics: General Principles

- Principle A: Beneficence and nonmaleficence
- Principle B: Fidelity and Responsibility
- Principle C: Integrity
- Principle D: Justice
- Principle E: Respect for People's Rights and Dignity

Principle A: Beneficence and Nonmaleficence

- Psychologists strive to benefit those with whom they work and take care to do no harm. In their professional actions, psychologists seek to safeguard the welfare and rights of those with whom they interact professionally and other affected persons, and the welfare of animal subjects of research.
- When conflicts occur among psychologists' obligations or concerns, they attempt to resolve these conflicts in a responsible fashion that avoids or minimizes harm.
- Because psychologists' scientific and professional judgments and actions may affect the lives of others, they are alert to and guard against personal, financial, social, organizational, or political factors that might lead to misuse of their influence.
- Psychologists strive to be aware of the possible effect of their own physical and mental health on their ability to help those with whom they work.

Principle B: Fidelity and Responsibility

- Psychologists establish relationships of trust with those with whom they work.
- They are aware of their professional and scientific responsibilities to society and to the specific communities in which they work.
- Psychologists uphold professional standards of conduct, clarify their professional roles and obligations, accept appropriate responsibility for their behavior, and seek to manage conflicts of interest that could lead to exploitation or harm.
- Psychologists consult with, refer to, or cooperate with other professionals and institutions to the extent needed to serve the best interests of those with whom they work.
- They are concerned about the ethical compliance of their colleagues' scientific and professional conduct.
- Psychologists strive to contribute a portion of their professional time for little or no compensation or personal advantage.

Principle C: Integrity

- Psychologists seek to promote accuracy, honesty, and truthfulness in the science, teaching, and practice of psychology.
- In these activities psychologists do not steal, cheat, or engage in fraud, subterfuge, or intentional misrepresentation of fact.
- Psychologists strive to keep their promises and to avoid unwise or unclear commitments.
- In situations in which deception may be ethically justifiable to maximize benefits and minimize harm, psychologists have a serious obligation to consider the need for, the possible consequences of, and their responsibility to correct any resulting mistrust or other harmful effects that arise from the use of such techniques.

Principle D: Justice

- Psychologists recognize that fairness and justice entitle all persons to access to and benefit from the contributions of psychology and to equal quality in the processes, procedures, and services being conducted by psychologists.
- Psychologists exercise reasonable judgment and take precautions to ensure that their potential biases, the boundaries of their competence, and the limitations of their expertise do not lead to or condone unjust practices.

Principle E: Respect for People's Rights and Dignity

- Psychologists respect the dignity and worth of all people, and the rights of individuals to privacy, confidentiality, and self-determination.
- Psychologists are aware that special safeguards may be necessary to protect the rights and welfare of persons or communities whose vulnerabilities impair autonomous decision making.
- Psychologists are aware of and respect cultural, individual, and role differences, including those based on age, gender, gender identity, race, ethnicity, culture, national origin, religion, sexual orientation, disability, language, and socioeconomic status and consider these factors when working with members of such groups.
- Psychologists try to eliminate the effect on their work of biases based on those factors, and they do not knowingly participate in or condone activities of others based upon such prejudices.

Education and Training

- 7.01 Design of Education and Training Programs
- 7.02 Descriptions of Education and Training Programs
- 7.03 Accuracy in Teaching
- 7.04 Student Disclosure of Personal Information
- 7.05 Mandatory Individual or Group Therapy
- 7.06 Assessing Student and Supervisee Performance
- 7.07 Sexual Relationships With Students and Supervisees

Research and publication

- 8.01 Institutional Approval
- 8.02 Informed Consent to Research
- 8.03 Informed Consent for Recording Voices and Images in Research
- 8.04 Client/Patient, Student, and Subordinate Research Participants
- 8.05 Dispensing With Informed Consent for Research
- 8.06 Offering Inducements for Research Participation

Research and publication (continued)

- 8.07 Deception in Research
- 8.08 Debriefing
- 8.09 Humane Care and Use of Animals in Research
- 8.10 Reporting Research Results
- 8.11 Plagiarism
- 8.12 Publication Credit
- 8.13 Duplicate Publication of Data
- 8.14 Sharing Research Data for Verification
- 8.15 Reviewers

8.01 Institutional Approval

1. When institutional approval is required, psychologists provide accurate information about their research proposals and obtain approval prior to conducting the research.
2. They conduct the research in accordance with the approved research protocol

8.02 Informed Consent to Research

When obtaining informed consent as required in Standard 3.10, Informed Consent , psychologists inform participants about

1. the purpose of the research, expected duration, and procedures;
2. their right to decline to participate and to withdraw from the research once participation has begun;
3. the foreseeable consequences of declining or withdrawing;
4. reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks, discomfort, or adverse effects;
5. any prospective research benefits;
6. limits of confidentiality;
7. incentives for participation; and
8. whom to contact for questions about the research and research participants' rights. They provide opportunity for the prospective participants to ask questions and receive answers.

8.03 Informed Consent for Recording Voices and Images in Research

Psychologists obtain informed consent from research participants prior to recording their voices or images for data collection unless

1. the research consists solely of naturalistic observations in public places, and it is not anticipated that the recording will be used in a manner that could cause personal identification or harm, or
2. the research design includes deception, and consent for the use of the recording is obtained during debriefing.

8.04 Client/Patient, Student, and Subordinate Research Participants

1. When psychologists conduct research with clients/patients, students, or subordinates as participants, psychologists take steps to protect the prospective participants from adverse consequences of declining or withdrawing from participation.
2. When research participation is a course requirement or an opportunity for extra credit, the prospective participant is given the choice of equitable alternative activities.

8.05 Dispensing With Informed Consent for Research

Psychologists may dispense with informed consent only

1. where research would not reasonably be assumed to create distress or harm and involves
 - (a) the study of normal educational practices, curricula, or classroom management methods conducted in educational settings;
 - (b) only anonymous questionnaires, naturalistic observations, or archival research for which disclosure of responses would not place participants at risk of criminal or civil liability or damage their financial standing, employability, or reputation, and confidentiality is protected;
 - or (c) the study of factors related to job or organization effectiveness conducted in organizational settings for which there is no risk to participants' employability, and confidentiality is protected or
2. where otherwise permitted by law or federal or institutional regulations.

8.06 Offering Inducements for Research Participation

1. Psychologists make reasonable efforts to avoid offering excessive or inappropriate financial or other inducements for research participation when such inducements are likely to coerce participation.
2. When offering professional services as an inducement for research participation, psychologists clarify the nature of the services, as well as the risks, obligations, and limitations.

8.07 Deception in Research

1. Psychologists do not conduct a study involving deception unless they have determined that the use of deceptive techniques is justified by the study's significant prospective scientific, educational, or applied value and that effective nondeceptive alternative procedures are not feasible.
2. Psychologists do not deceive prospective participants about research that is reasonably expected to cause physical pain or severe emotional distress.
3. Psychologists explain any deception that is an integral feature of the design and conduct of an experiment to participants as early as is feasible, preferably at the conclusion of their participation, but no later than at the conclusion of the data collection, and permit participants to withdraw their data.

8.08 Debriefing

1. Psychologists provide a prompt opportunity for participants to obtain appropriate information about the nature, results, and conclusions of the research, and they take reasonable steps to correct any misconceptions that participants may have of which the psychologists are aware.
2. If scientific or humane values justify delaying or withholding this information, psychologists take reasonable measures to reduce the risk of harm.
3. When psychologists become aware that research procedures have harmed a participant, they take reasonable steps to minimize the harm.

8.09 Humane Care and Use of Animals in Research

1. Psychologists acquire, care for, use, and dispose of animals in compliance with current federal, state, and local laws and regulations, and with professional standards.
2. Psychologists trained in research methods and experienced in the care of laboratory animals supervise all procedures involving animals and are responsible for ensuring appropriate consideration of their comfort, health, and humane treatment.

8.10 Reporting Research Results

1. Psychologists do not fabricate data. (See also Standard 5.01a, Avoidance of False or Deceptive Statements .)
2. If psychologists discover significant errors in their published data, they take reasonable steps to correct such errors in a correction, retraction, erratum, or other appropriate publication means.

8.11: Plagiarism

1. Plagiarism: Psychologists do not present portions of another's work or data as their own, even if the other work or data source is cited occasionally.
2. "A general principle underlying ethical writing is the notion that the written work of an author, be it a manuscript for a magazine or scientific journal, a research paper submitted for a course, or a grant proposal submitted to a funding agency, represents an implicit contract between the author of that work and its readers. According to this implicit contract, the reader assumes that the author is the sole originator of the written work, that any text or ideas borrowed from others are clearly identified as such by established scholarly conventions, and that the ideas conveyed therein are accurately represented to the best of the author's abilities. In sum, as Kolin (2002) points out, "Ethical writing is clear, accurate, fair, and honest". It also conveys to the reader that we strive for ethical conduct as well as ethical practice."

Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing Miguel Roig, Ph.D.
<http://ori.hhs.gov/sites/default/files/plagiarism.pdf>

A guide to ethical writing

The following guidelines are taken from "Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing" by Miguel Roig.

1. An ethical writer ALWAYS acknowledges the contributions of others and the source of his/her ideas.
2. Any verbatim text taken from another author must be enclosed in quotation marks.
3. We must always acknowledge every source that we use in our writing; whether we paraphrase it, summarize it, or enclose it quotations.
4. When we summarize, we condense, in our own words, a substantial amount of material into a short paragraph or perhaps even into a sentence.
5. Whether we are paraphrasing or summarizing we must always identify the source of the information.
6. When paraphrasing and/or summarizing others' work we must reproduce the exact meaning of the other author's ideas or facts using our words and sentence structure.
7. In order to make substantial modifications to the original text that result in a proper paraphrase, the author must have a thorough understanding of the ideas and terminology being used.
8. A responsible writer has an ethical responsibility to readers, and to the author/s from whom s/he is borrowing, to respect others' ideas and words, to credit those from whom we borrow, and whenever possible, to use one's own words when paraphrasing.
9. When in doubt as to whether a concept or fact is common knowledge, provide a citation.
10. Authors who submit a manuscript for publication containing data, reviews, conclusions, etc., that have already been disseminated in some significant manner (e.g., published as an article in another journal, presented at a conference, posted on the internet) must clearly indicate to the editors and readers the nature of the previous dissemination.

A guide to ethical writing: part 2

The following guidelines are taken from "Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing" by Miguel Roig.

1. Authors of complex studies should heed the advice previously put forth by Angell & Relman (1989). If the results of a single complex study are best presented as a 'cohesive' single whole, they should not be partitioned into individual papers....
2. Because some instances of plagiarism, self-plagiarism, and even some writing practices that might otherwise be acceptable (e.g., extensive paraphrasing or quoting of key elements of a book) can constitute copyright infringement, authors are strongly encouraged to become familiar with basic elements of copyright law.
3. While there are some situations where text recycling is an acceptable practice, it may not be so in other situations. Authors are urged to adhere to the spirit of ethical writing and avoid reusing their own previously published text, unless it is done in a manner consistent with standard scholarly conventions (e.g., by using of quotations and proper paraphrasing)
4. Authors are strongly urged to double-check their citations. Specifically, authors should always ensure that each reference notation appearing in the body of the manuscript corresponds to the correct citation listed in the reference section and vice versa and that each source listed in the reference section has been cited at some point in the manuscript. In addition, authors should also ensure that all elements of a citation (e.g., spelling of authors' names, volume number of journal, pagination) are derived directly from the original paper, rather than from a citation that appears on a secondary source. Finally, authors should ensure that credit is given to those authors who first reported the phenomenon being studied.
5. The references used in a paper should only be those that are directly related to its contents. The intentional inclusion of references of questionable relevance for purposes of manipulating a journal's or a paper's impact factor or a paper's chances of acceptance is an unacceptable practice.

A guide to ethical writing: part 3

The following guidelines are taken from "Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing" by Miguel Roig.

1. Authors should follow a simple rule: Strive to obtain the actual published paper. When the published paper cannot be obtained, cite the specific version of the material being used, whether it is conference presentation, abstract, or an unpublished manuscript.
2. Generally, when describing others' work, do not rely on a secondary summary of that work. It is a deceptive practice, reflects poor scholarly standards, and can lead to a flawed description of the work described. Always consult the primary literature.
3. If an author must rely on a secondary source (e.g., textbook) to describe the contents of a primary source (e.g., an empirical journal article), s/he should consult writing manuals used in her discipline to follow the proper convention to do so. Above all, always indicate the actual source of the information being reported.
4. When borrowing heavily from a source, authors should always craft their writing in a way that makes clear to readers, which ideas are their own and which are derived from the source being consulted.
5. When appropriate, authors have an ethical responsibility to report evidence that runs contrary to their point of view. In addition, evidence that we use in support of our position must be methodologically sound. When citing supporting studies that suffer from methodological, statistical, or other types of shortcomings, such flaws must be pointed out to the reader.
6. Authors have an ethical obligation to report all aspects of the study that may impact the independent replicability of their research.
7. Researchers have an ethical responsibility to report the results of their studies according to their a priori plans. Any post hoc manipulations that may alter the results initially obtained, such as the elimination of outliers or the use of alternative statistical techniques, must be clearly described along with an acceptable rationale for using such techniques.

8.12 Publication Credit

1. Psychologists take responsibility and credit, including authorship credit, only for work they have actually performed or to which they have substantially contributed. (See also Standard 8.12b, Publication Credit .)
2. Principal authorship and other publication credits accurately reflect the relative scientific or professional contributions of the individuals involved, regardless of their relative status.
 - Mere possession of an institutional position, such as department chair, does not justify authorship credit.
 - Minor contributions to the research or to the writing for publications are acknowledged appropriately, such as in footnotes or in an introductory statement.
3. Except under exceptional circumstances, a student is listed as principal author on any multiple-authored article that is substantially based on the student's doctoral dissertation. Faculty advisors discuss publication credit with students as early as feasible and throughout the research and publication process as appropriate.

8.13 Duplicate Publication of Data

1. Psychologists do not publish, as original data, data that have been previously published.
2. This does not preclude republishing data when they are accompanied by proper acknowledgment.

8.14 Sharing Research Data for Verification

1. After research results are published, psychologists do not withhold the data on which their conclusions are based from other competent professionals who seek to verify the substantive claims through reanalysis and who intend to use such data only for that purpose, provided that the confidentiality of the participants can be protected and unless legal rights concerning proprietary data preclude their release. This does not preclude psychologists from requiring that such individuals or groups be responsible for costs associated with the provision of such information.
2. Psychologists who request data from other psychologists to verify the substantive claims through reanalysis may use shared data only for the declared purpose. Requesting psychologists obtain prior written agreement for all other uses of the data.

8.15 Reviewers

1. Psychologists who review material submitted for presentation, publication, grant, or research proposal review respect the confidentiality of and the proprietary rights in such information of those who submitted it.

9.05 Test Construction

Psychologists who develop tests and other assessment techniques use appropriate psychometric procedures and current scientific or professional knowledge for test design, standardization, validation, reduction or elimination of bias, and recommendations for use.

APA ethics and the torture debate

1. Post 9/11 there was a discussion of the ethics of psychologists being involved in “enhanced interrogations”
2. It is likely that changes in the 2003 ethics code were made in a subtle way that allowed
 - Most psychologists to think that the ethics code did not allow torture
 - Allowed some psychologists to engage in “enhanced interrogations” while following interpretations of US law
3. Such actions probably violated the Nuremberg principals of universal law

APA and the Hoffman Report

1. In 2014, APA, in response to questions about the adoption of the ethics 2003 guidelines, hired the firm of Sidley and Austin to conduct an inquiry. David Hoffman of Sidley did the investigation.
2. Full report is available at <https://www.apa.org/independent-review/APA-FINAL-Report-7.2.15.pdf>
3. APA Council of Representatives discussed this report in August, 2015
4. Senior leadership of APA probably colluded with Defense Department to write ethics code in ambiguous manner.
5. This was [denied by several former APA presidents](#)
6. Strongly criticized by Division 19, (Military Psychology)

Revised statement

1. Redefines the term “cruel, inhuman or degrading treatment or punishment” in the 2006 and 2013 Council resolutions in accordance with the U.N. Convention Against Torture (rather than with the 1994 U.S. Reservations to this treaty, which were co-opted by the Bush administration to justify harsh interrogation techniques) so as to ensure that it provides protections to everyone, everywhere, including foreign detainees held outside of the U.S.;
2. Prohibits psychologists from participating in national security interrogations involving military and intelligence authorities, while allowing for involvement in general policy consultation regarding humane interrogations.
3. This does not apply to domestic detention settings in which detainees are afforded all of the protections under the U.S. Constitution;

Timeline of APA Policies & Actions Related to Detainee Welfare

1. Timeline of APA Policies & Actions Related to Detainee Welfare and Professional Ethics in the Context of Interrogation and National Security
2. The American Psychological Association's (APA) position on torture is clear and unequivocal: Any direct or indirect participation in any act of torture or other forms of cruel, inhuman or degrading treatment or punishment by psychologists is strictly prohibited. There are no exceptions. Such acts as waterboarding, sexual humiliation, stress positions and exploitation of phobias are clear violations of APA's no torture/no abuse policy.
3. [Series of letters written](#) to US. government about APA's rejection of torture

Northwestern Research guidelines

<http://www.research.northwestern.edu/opr/irb/index.html>

1. What is the Institutional Review Board (IRB)?

- The Institutional Review Board (IRB) is a standing university committee established under federal regulations .
- The IRB is responsible for reviewing all research involving human subjects, insuring the equitable selection of research subjects, and overseeing institutional compliance with all federal guidelines and regulations relating to research with human subjects.

2. Do all studies have to be submitted to the IRB?

- All research involving the collection of data from human subjects must be submitted to the Office for the Protection of Research Subjects (OPRS).
- Some research activities are exempt from full IRB review; the OPRS staff must confirm the type of review required and will issue a determination of exemption on the IRB's behalf.
- See Types of Review.

Consent forms (see OPRS template for detail)

1. Procedure
2. Benefits
3. Costs/Risks
4. Alternatives
5. Confidentiality
6. Subject's rights and the right to withdraw
7. Consent

Online training courses

- <https://www.irb.northwestern.edu/human-subject-protection-training/>
- taken from a training course at Harvard and required for any investigator or experimenter running human subjects at NU
- Excerpts from the Harvard/NU slides follow;

National Academies of Science

1. "Who We Are: Created to Advise the Nation
2. The National Academies of Sciences, Engineering, and Medicine provide independent, objective advice to inform policy with evidence, spark progress and innovation, and confront challenging issues for the benefit of society.
3. Members are elected to the NAS, NAE, or NAM in recognition of outstanding achievements, and membership is considered one of the highest professional honors. Among the world's most distinguished scientists, engineers, and health care professionals, our members are essential to the work we do.
4. "To meet the government's urgent need for an independent adviser on scientific matters, President Lincoln signed a congressional charter forming the National Academy of Sciences in 1863. Under the same charter, the Academy eventually expanded to include the National Academy of Engineering in 1964, and the National Academy of Medicine, which was established in 1970 as the Institute of Medicine"

On being a scientist

<http://www.nap.edu/readingroom/books/obas/> On being a scientist

1. The Social Foundations of Science
2. Experimental Techniques and the Treatment of Data
3. Values in Science
4. Conflicts of Interest
5. Publication and Openness
6. The Allocation of Credit - Authorship Practices
7. Error and Negligence in Science
8. Misconduct in Science
9. Responding to Violations of Ethical Standards
10. The Scientist in Society

WHO SHOULD GET CREDIT FOR THE DISCOVERY OF PULSARS?

A much-discussed example of the difficulties associated with allocating credit between junior and senior researchers was the 1967 discovery by Jocelyn Bell, then a 24-year-old graduate student, of pulsars. Over the previous two years, Bell and several other students, under the supervision of Bell's thesis advisor, Anthony Hewish, had built a 4.5-acre radiotelescope to investigate scintillating radio sources in the sky. After the telescope began functioning, Bell was in charge of operating it and analyzing its data under Hewish's direction. One day Bell noticed "a bit of scruff" on the data chart. She remembered seeing the same signal earlier and, by measuring the period of its recurrence, determined that it had to be coming from an extraterrestrial source. Together Bell and Hewish analyzed the signal and found several similar examples elsewhere in the sky.

Pulsar credit (continued)

After discarding the idea that the signals were coming from an extraterrestrial intelligence, Hewish, Bell, and three other people involved in the project published a paper announcing the discovery, which was given the name “pulsar” by a British science reporter. Many argued that Bell should have shared the Nobel Prize awarded to Hewish for the discovery, saying that her recognition of the signal was the crucial act of discovery. Others, including Bell herself, said that she received adequate recognition in other ways and should not have been so lavishly rewarded for doing what a graduate student is expected to do in a project conceived and set up by others.

Misconduct in Science

1. Beyond honest errors and errors caused through negligence are a third category of errors: those that involve deception.
2. Making up data or results (fabrication), changing or misreporting data or results (falsification), and using the ideas or words of another person without giving appropriate credit (plagiarism)- all strike at the heart of the values on which science is based.
3. These acts of scientific misconduct not only undermine progress but the entire set of values on which the scientific enterprise rests.
4. Anyone who engages in any of these practices is putting his or her scientific career at risk.
5. Even infractions that may seem minor at the time can end up being severely punished.

Misconduct (continued)

1. The ethical transgressions discussed in earlier sections—such as misallocation of credit or errors arising from negligence—are matters that generally remain internal to the scientific community.
2. Usually they are dealt with locally through the mechanisms of peer review, administrative action, and the system of appointments and evaluations in the research environment.
3. But misconduct in science is unlikely to remain internal to the scientific community. Its consequences are too extreme:
 - it can harm individuals outside of science (as when falsified results become the basis of a medical treatment),
 - it squanders public funds, and
 - it attracts the attention of those who would seek to criticize science.
 - As a result, federal agencies, Congress, the media, and the courts can all get involved.

Ethical Guidelines — A summary

1. Be Honest
2. Be Fair
3. Be Accurate