

Key Points to Remember from the NIH Ethics Course on the Responsible Conduct of Research

SCIENTIFIC INTEGRITY

All research staff in the Intramural Research Program should maintain exemplary standards of intellectual honesty in the formulation, conduct, reviewing, reporting of scientific research and. Without a high standard of scientific integrity, the scientific community and general public may become victims of scientific misconduct.

Points to Remember

The scientific community and the community at large rightly expect adherence to exemplary standards of intellectual honesty in the formulation, conduct, reviewing, and reporting of scientific research.

DATA ACQUISITION, MANAGEMENT, SHARING, AND OWNERSHIP

Scientific data include: laboratory records (physical and electronic), experimental protocols, and procedures of reduction and analysis.

Points to Remember

All individuals involved in the development and/or execution of an experiment and subsequent data processing are responsible for the accuracy of the scientific data. NIH requires that all data and laboratory notebooks be retained for a minimum of 5 years after publication.

PUBLICATION PRACTICES AND RESPONSIBLE AUTHORSHIP

Publication of results fulfills our responsibility to communicate research findings to the scientific community.

Authorship is the primary mechanism for determining the allocation of credit for scientific advances and thus the primary basis for assessing a scientist's contributions to developing new knowledge.

Points to Remember

Publication is essential as the beginning of the process by which the scientific community can assess, validate, and further develop the results.

Authorship requires a significant contribution to the conceptualization, design, execution, and/or interpretation of the study, as well as a willingness to assume responsibility for the study

PEER REVIEW

Peer review, a critical evaluation of scientific work, is an essential component of the conduct of responsible science that serves as the basis for everyday decision-making regarding scientific publication and research funding.

Points to Remember

All material under review is privileged information, and as such, should not be used by the reviewer for any other purpose, copied, or shared with anyone outside of the review process.

MENTOR/TRAINEE RELATIONSHIPS

A mentor is a person who has achieved career success, and counsels and guides another for the purpose of helping him or her achieve success. A successful mentor/trainee relationship provides the trainee with sound skills in the conduct of research and attainment of career goals. Mentoring and being mentored are life-long, essential components of professional life.

Points to Remember

While mentoring of junior scientists is an essential obligation of senior scientists at the NIH, the professional relationship that a trainee develops with his or her mentor is one of the most important outcomes from a fellowship. The trainee and mentor must work together to develop a relationship that fosters freedom to pursue scientific inquiry, critical evaluations, as well as personal and professional integrity and development.

COLLABORATIVE SCIENCE

Research collaborations facilitate progress and should be encouraged; however, the ground rules for collaborations, including authorship issues, should be discussed openly among all participants from the beginning.

Points to Remember

The NIH encourages research collaborations, both within the intramural programs and with investigators at extramural sites, because they can enhance scientific progress. However, such collaborations may require the establishment of formal mechanisms, such as a material transfer agreement (MTA) or a human subjects protection review.

HUMAN AND ANIMAL SUBJECTS

The use of humans and animals in research is essential to the NIH mission for improving human health but such research requires compliance with specific ethical and legal considerations.

Points to Remember

Obtaining informed consent is both a legal and moral obligation. Institutional Review Boards (IRBs) must approve all human research and must be informed any time that circumstances related to the research or human participation change.

People conducting human subject research must take the course on *Protection of Human Research Subjects* before implementing their research.

The use of animals in research must be reviewed by an NIH Animal Care & Use Committee (ACUC).

People conducting animal research must take the course *Using Animals in Intramural Research*.

CONFLICT OF INTEREST AND COMMITMENT

A conflict of interest arises when a person exploits, or appears to exploit, his or her position for personal gain or for the profit of a member of his or her immediate family or household.

Points to Remember

Potential conflicts of interest may not be recognized by others. Researchers have the obligation to disclose all relevant relationships, both financial and personal.