

XIX. AURA Policy Governing Responsible Conduct of Research

A. Introduction

Ethical and responsible conduct of research is essential in promoting excellence and in establishing public trust in science and engineering. AURA is committed to foster and promote ethical decision making and professionalism, and requires that everyone engaged in research at AURA Centers understands and abides by appropriate principles in conducting research.

Integrity in research requires commitment to the accuracy of published works, fairness in recognizing and citing the accomplishments of others, conferring of co-authorship on those who have made substantial contributions to the research, the ability and willingness of authors to defend publicly their published results, and impartial review of manuscripts.

AURA has a responsibility to create and sustain an atmosphere where honesty and integrity are paramount in research conduct. As a recipient of federal funding, AURA also has an obligation to comply with all appropriate legislative requirements. All staff members and associated personnel conducting research at AURA Centers, including postdoctoral fellows, graduate and undergraduate students, are expected to maintain the ethical standards described in this policy.

B. Guidelines for professional conduct

The American Physical Society has issued ethical guidelines for its members (http://www.aps.org/policy/statements/02_2.cfm). Those guidelines have also been adopted by the American Astronomical Society. AURA endorses those guidelines, which are reproduced in this section:

Each research scientist is a citizen of the community of science. Each shares responsibility for the welfare of this community. Science is best advanced when there is mutual trust, based upon honest behavior, throughout the community. Acts of deception, or any other acts that deliberately compromise the advancement of science, are unacceptable. Honesty must be regarded as the cornerstone of ethics in science. Professional integrity in the formulation, conduct, and reporting of physics activities reflects not only on the reputations of individual scientists and their organizations, but also on the image and credibility of the profession as perceived by scientific colleagues, government and the public. It is important that the tradition of ethical behavior be carefully maintained and transmitted with enthusiasm to future generations.

The following are the minimal standards of ethical behavior relating to several critical aspects of the physics profession. Scientists have an individual and a collective responsibility to ensure that there is no compromise with these guidelines.

Research Results

The results of research should be recorded and maintained in a form that allows analysis and review. Research data should be immediately available to scientific collaborators. Following publication, the data should be retained for a reasonable period in order to be available promptly and completely to responsible scientists. Exceptions may be appropriate in certain circumstances in order to preserve privacy, to assure patent protection, or for similar reasons.

Fabrication of data or selective reporting of data with the intent to mislead or deceive is an egregious departure from the expected norms of scientific conduct, as is the theft of data or research results from others.

It should be recognized that honest error is an integral part of the scientific enterprise. It is not unethical to be wrong, provided that errors are promptly acknowledged and corrected when they are detected.

Publication and Authorship Practices

Authorship should be limited to those who have made a significant contribution to the concept, design, execution or interpretation of the research study. All those who have made significant contributions should be offered the opportunity to be listed as authors. Other individuals who have contributed to the study should be acknowledged, but not identified as authors. The sources of financial support for the project should be disclosed.

Plagiarism constitutes unethical scientific behavior and is never acceptable. Proper acknowledgement of the work of others used in a research project must always be given. Further, it is the obligation of each author to provide prompt retractions or corrections of errors in published works.

Both authors and reviewers should ensure that appropriate credit is given to prior work, through fair referencing and citations.

Peer Review

Peer review provides advice concerning research proposals, the publication of research results and career advancement of colleagues. It is an essential component of the scientific process.

Peer review can serve its intended function only if the members of the scientific community are prepared to provide thorough, fair and objective evaluations based on requisite expertise. Although peer review can be difficult and time-consuming, scientists have an obligation to participate in the process.

Privileged information or ideas that are obtained through peer review must be kept confidential and not used for competitive gain.

Reviewers should disclose conflicts of interest resulting from direct competitive, collaborative, or other relationships with any of the authors, and avoid cases in which such conflicts preclude an objective evaluation.

Conflict of Interest

There are many professional activities of physicists that have the potential for a conflict of interest. Any professional relationship or action that may result in a conflict of interest must be fully disclosed. When objectivity and effectiveness cannot be maintained, the activity should be avoided or discontinued.

C. Training

AURA Centers must ensure that appropriate training in responsible research conduct is provided for all staff members and associated personnel, including postdoctoral fellows, graduate and undergraduate students. AURA will assist in coordinating the training programs. The training must address the following topics:

- Responsible conduct of research
- Responsible mentoring and supervision
- Data acquisition and management
- Responsible authorship
- Peer review
- Conflicts of interest
- Identification of and appropriate response to research misconduct

The training sessions will be conducted during the first year of employment, and thereafter on a timescale consistent with the appropriate requirements for federally funded research. AURA Centers will be required to show certification for participating staff. The certification shall be recorded in the personnel file and made available as appropriate.

D. Research misconduct

Reporting research misconduct is a responsibility of all AURA employees.

AURA shall develop guidelines on the appropriate procedures to deal with reported misconduct. Those guidelines will be consistent with the Federal Policy on Research Misconduct (<http://ori.hhs.gov/education/products/RCRintro/c02/b1c2.html>) and with existing AURA policies, and will serve as the basis for implementation procedures

developed at each AURA Center. Those procedures must provide due notice of the complaint to the respondent(s); safeguard the rights of complainant(s) and respondent(s); preserve confidentiality to the maximum extent possible; ensure preservation and, if necessary, sequestration of appropriate research records; provide impartial review of the allegation by a suitable investigative body; and allow suitable recourse to appeal for the respondent(s). The AURA Center Director will identify a senior member of his/her staff as the center's Research Integrity Officer (RIO). The AURA Center RIO will be responsible for oversight of the procedures, including informing the appropriate federal authorities of any allegations of misconduct, and for providing a final report to the AURA Center Director and to the AURA President.

AURA employees shall cooperate in the review of allegations and the conduct of inquiries and investigations, including providing relevant materials. AURA and AURA Centers will monitor the treatment of individual(s) who bring allegations of misconduct or of inadequate institutional response thereto, of those who cooperate in inquiries or investigations and of the respondent. The AURA Center RIO, working in conjunction with the Human Resources department, will ensure that no retaliatory actions are taken against those personnel, and will review instances of alleged retaliation. Any apparent cases of retaliation will be dealt with following AURA Whistleblower Policy. Frivolous, mischievous or malicious misrepresentation in alleging misconduct will not be tolerated, and AURA will ensure that employees subject to misrepresented allegations receive full support. AURA employees misrepresenting research misconduct may be subject to administrative action.

If an inquiry results in a finding of misconduct, which is not reversed on appeal, AURA administrative action may be taken. Depending on the seriousness of the misconduct, that action may include:

- a) Removal from a particular project
- b) Monitoring of future work
- c) Letter of reprimand
- d) Salary reduction
- e) Initiation of steps leading to possible rank reduction
- f) Withdrawal of publications related to the research project
- g) Probation
- h) Suspension
- i) Termination

Procedures for imposing sanctions and the appropriate sanctions shall be governed by existing AURA and AURA Center policies (<http://www.aura-astronomy.org/about/policies/Section%20B/Section%20B%20Complete.pdf>), including those regarding grievances and/or termination.

Any penalties that may be imposed by federal authorities and/or external funding agencies shall be deemed separate from any imposed by AURA.