



***ORNL's Values
in the Conduct of
Research and Development***

Oak Ridge National Laboratory's Values in the Conduct of Research and Development

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Introduction

No quality of the Oak Ridge National Laboratory (ORNL) is more important than our integrity. Historically, just as a focus on national needs rather than disciplinary agendas has distinguished national laboratories from academic research centers, scientific independence has distinguished national laboratories from private-sector research centers. Integrity is therefore a defining characteristic of our “niche” in the research and development (R&D) community.

More fundamentally, of course, our support from public funds means that we are answerable to the public at large. Fulfilling this social contract requires that we commit ourselves to the highest standards of integrity in formulating, conducting, and reporting our R&D. Most of these standards are shared with the R&D community at large, but our particular character as a national laboratory sometimes poses special challenges to our values as an institution. The purpose of this statement is to provide a public record of what we stand for as an institution, especially for the benefit of colleagues beginning their careers at the Laboratory. It is not a list of rules to be enforced. It is an articulation of our values and commitments, reflected in the more specific procedures and practices that we follow in assuring quality and integrity in our research and development activities.

Shared Standards

ORNL's values as an institution are rooted in many of the same intellectual and ethical standards as its colleagues' in the R&D community, such as universities and research institutes.

Data management. ORNL's values call for the highest professional standards in the acquisition, maintenance, and storage of research data. This includes the careful and complete recording of all data, the retention of data in retrievable forms, the availability of data to research collaborators and supervisors without restriction, and after publication and/or patenting the availability of data to outside investigators.

Publication. ORNL's values hold that open-literature publication of research and development results is a demonstration of our innovativeness, an assurance of peer-reviewed quality, and an important aspect of our social contract with the public — a payoff to the community at large beyond our

immediate responsibilities to project sponsors. We stand for timely publication of research, complete documentation of the research process so that peers can replicate the investigation if they wish, and prompt interaction or correction if published results turn out to be incorrect. We do not engage in duplicative publication of research (except for review articles) or the premature release of data; and we do not build resumes by breaking up our work into the largest number of minimally publishable units. In addition, of course, in publishing, the results of our research we give credit to the sponsors who have made our work possible.

Authorship. ORNL's values require that authorship be an appropriate representation of individual contributions to the research study. Because many ORNL publications and other reports are issued by multiple author teams — often interdisciplinary in their composition — it is important to be sensitive to issues of equity, balance, and differences in disciplinary traditions. Generally, the order of authorship should reflect relative contributions, realizing that different research disciplines may have different cultures and traditions in this regard. We do not support “honorary” authorship; authorship should be limited to those making significant contributions to the research effort. The lead author is responsible for the entire manuscript, including authorship and attribution, but each author is responsible for the quality of her/his portion of the work and the conclusions in the paper.

Peer review. ORNL's values hold not only that Laboratory researchers seek and welcome peer reviews of their work but that, as peer reviewers themselves, Laboratory staff assure objectivity and the protection of privileged information under review. Peer-reviewed information should never be used to benefit the reviewer if it has not previously been made public. Our values hold that we do not agree to serve as peer reviewers unless we are technically qualified and will review the document in a timely fashion, that we do not serve as reviewers if there are real or possibly apparent conflicts of interest, and that we be able to fully document the rationale for negative reviews.

Conflict of Interest. ORNL's values require that Laboratory staff be alert to any potential conflict of interest, real or perceived; that such conflicts of interest be carefully avoided; and that any potentials for a conflict of interest be fully disclosed. Possible conflicts of interest include scientific competitiveness, economic gain, or protection of the interests of sources of financial support.

Treatment of colleagues. Our values call for us to treat each other with respect and courtesy as we would ourselves like to be treated; to listen carefully when a colleague expresses concerns; and to assist each other in

reaching his/her potential however we can, including careful and balanced mentoring of junior colleagues. In particular, we stand for integrity, sensitivity and fairness in monitoring and supervisory roles. We are careful to recognize who is responsible for generating new ideas but, at the same time, as staff members of a national laboratory we all recognize that our work belongs to a larger community.

These values, along with emphasizing the importance of environmental, safety, and health protection, are reflected in a number of ORNL's standard management practices, such as operational imperatives, integrated safety management, quality assurance, publication policies, conflict of interest statements, and employee complaint procedures.

Special Challenges

Besides the values we share with others in the R&D community, as a national laboratory we sometimes face issues stemming from our particular character: an R&D institution managed for a mission agency of the federal government in an era of change in federal government budgets and roles, coupled with a shift toward bottom-up program development and management and a growing emphasis on "customer satisfaction."

These special issues call for a strong and consistent set of values — knowing what it is that we stand for at ORNL:

Independence and integrity. At ORNL, we value "customer satisfaction," but — if a choice must be made — our integrity has a higher value. Our commitments include attention to

- ***Sponsor pressures.*** We seek to deliver on our promises to sponsors of our R&D activities, and we normally offer our sponsors the opportunity to review what we intend to publish; but if a sponsor requests that we edit our reports in ways that depart from what we have concluded is the truth, our scientific integrity has a higher value than sponsor satisfaction.
- ***Self censorship.*** In a time when maintaining one's financial support can be a powerful determinant of the work environment, we need to guard against temptations to shape our conclusions to please users, including omitting findings that might displease a sponsor. Work must be reported honestly and founded in fact.
- ***The public domain.*** As a national laboratory operated in the public interest, except for certain narrowly defined circumstances our R&D findings belong not just to our specific sponsors but to the public at large. This is one of the principal reasons why the Laboratory encourages open-literature publication and participation in professional societies.

Coping with change. One of the reasons our nation supports national laboratories is to help respond to changing needs for science and technology in the public interest. In connection with our responsibilities as a national institution, we seek to maintain the following commitments:

- **Relevance.** As national needs change, we seek ways to apply our expertise to new questions, maintaining our foundation in scientific and technological excellence but showing leadership in relating the nation's research and development capacities to national needs and understanding that as an institution we must be accountable to the nation's citizens in delivering value in return for their investment in us.
- **Accountability.** We understand that reducing the U.S. government's budget deficit means that many R&D budgets will shrink, and we are prepared to share the pain associated with deficit reduction. As resources shrink, our own program support should be based on the merits of our ideas and our expertise, not on arguing for entitlements.
- **Competition.** We believe that the right thing for the nation, and in the long term for our institution, is full, open, and fair competition among peers for research support. We are confident that such competition will benefit us as a rule; when it does not, we need to take a careful look at the quality of what we are offering.

Conflict of interest. For staff members of a national laboratory, conflict of interest concerns are most often raised by institutional interface/partnership situations, especially where individual economic gain might be involved. Our institutional values include the following commitments:

- **Partnerships.** As individuals, research groups, or organizational subdivisions of the Laboratory, we promote institutional partnerships in the national interest, not for our own financial or fiscal benefit.
- **Monetary rewards.** We do not pursue research and development in order to earn royalties. Our aim is to produce sound and useful knowledge and technologies. One measure of our success — among many — may be the total amount of royalties earned, but that should not be the principal objective of anything that we do as a not-for-profit institution operated for the national interest.

Responsibilities

Living up to these values is a shared responsibility among all the members of our institutional family: our staff, our managers, our sponsors, and our partners.

Research staff. We expect our staff members not only to exhibit but to help to guard the values outlined above, as we act as individuals within the Laboratory and as we interact with our colleagues. In conducting R&D at ORNL, our values cannot be assured unless they are shared by the staff and embedded in what we do day-to-day, regardless of procedures for management oversight.

Research managers. We expect our managers to share these values as well, to exhibit them in their research management and oversight, and in particular to assist the research staff in interactions with sponsors and partners that threaten to jeopardize our values.

Research sponsors. We expect the sponsors of R&D at ORNL to understand and support our values, even though they may limit the ability of sponsors to control what we report. When funding is provided for R&D programs at ORNL, the relationship includes acceptance of the kind of institution we are and the standards that protect our integrity and our fundamental value to our sponsors and the nation at large.

Research partners. We expect our R&D partners to respect our values and, in their relationships with us, to adhere to similar values in the conduct of their work.

This statement of values does not address issues of scientific or professional misconduct, such as plagiarism, falsification of data, fabrication of data, or other practices contrary to scientific honesty and freedom in the workplace. These issues are addressed by ORNL Procedure ET-001.