

## **Ethical Challenges and Practical Solutions for Managers in Research**

Proceedings are available for the workshop on "Ethical Challenges and Practical Solutions for Managers in Research" held last September in Albuquerque under the joint sponsorship of Sigma Xi, The Scientific Research Society, and ORI.

The proceedings contain an executive summary, the presentations of five speakers, a discussion of the new Sigma Xi publication, *The Responsible Researcher*, and a panel discussion on institutional and government interactions. Discussion following each presentation is also included.

A copy of the executive summary may be found below.

The 75-page proceedings are available from Sigma Xi, The Scientific Research Society, P. O. Box 13975, Research Triangle Park, N.C. 27709. Cost per copy is \$6.00.

### **Ethical Challenges and Practical Solutions for Managers in Research Executive Summary**

While the American public and Congress seem less concerned today with ethical issues in research than they were a few years ago, many research institutions have come to realize that scientific misconduct is a low probability, high impact problem that merits serious attention. Scientific misconduct may be rare, occurring by some estimates in less than 1 percent of all federally funded research projects, but when it does occur, the publicity it generates can be embarrassing and disruptive for institutions, especially if they are not prepared to deal with the issues involved.

At the same time, university/industry partnerships have proliferated in recent years to such an extent that conflicts of interest, of commitment and of effort have added new complexities to ethical concerns in research. Where once conflicts of interest seemed clearly defined, there are more gray areas of uncertainty now, and the out-dated policies of many institutions clearly are not designed to deal with these new complexities.

These were among the views expressed at a one-day workshop titled *Ethical Challenges and Practical Solutions for Managers in Research*, co-sponsored by Sigma Xi and the U.S. Public Health Service Office of Research Integrity (ORI) held in Albuquerque, New Mexico on September 10, 1999. The workshop featured talks by Sigma Xi and ORI officials, academic research directors and national laboratory managers, and raised a number of issues for discussion the next day at a planning meeting for the 2000 Sigma Xi Forum on ethics in science and technology, to be held in Albuquerque on November 9-10, 2000.

Not only has the research landscape changed substantially since 1984, when Sigma Xi published *Honor in Science*, its widely circulated guidebook to ethical conduct in research, but a number of ethical issues have come increasingly into play just in the past six years, since Sigma Xi's 1993 Forum *Ethics, Values and the Promise of Science* highlighted a number of concerns.

A key focus of the Sigma Xi/ORI workshop was the newly published companion volume to *Honor in Science*, titled *The Responsible Researcher: Paths and Pitfalls*. The new 64-page booklet covers a number of ethical issues that have arisen since the earlier guidebook was first published. Among them

are grant pressures on professors and their effects on the mentoring process, academic/industrial conflicts of interest and undergraduates' early exposure to research and associated ethical issues.

The Sigma Xi booklet is intended to be more than a manual that explains how to avoid getting into trouble. It also emphasizes some of the features of good practice that researchers should follow. Much of its content has to do with process. It doesn't attempt to resolve issues. It points out that a lot of what might be described as bad behavior doesn't fall into the realm of scientific misconduct, but should be avoided nonetheless.

A major focus of the booklet is on the responsibilities of senior faculty. If senior faculty take ethical issues seriously and provide the proper environment by setting a good example and showing their interest, then it's much less likely that problems will arise. Nobel laureate Rosalyn Yalow is quoted as saying that "Instances of dishonesty in science will continue to occur until senior scientists understand that if there's unethical behavior in their laboratories, it is they who are personally responsible."

As was emphasized at the workshop, a growing area of concern involves the rise of university/industry partnerships, which represents a post Cold War shift in the way research is funded in the U.S. New questions about intellectual property, technology transfer and conflict of interest, among other issues, have arisen out of the new mode of funding research through partnerships and multiple sources of funding. One workshop speaker predicted that, if recent trends continue, as much as half of all university research may involve partnerships of some sort by the end of the next decade.

Workshop participants were given an inside view of the federal regulatory process by ORI officials and integrity officers from the National Science Foundation and the National Institutes of Health. They also heard from university integrity officers and national laboratory research managers. The talks included a number of case examples illustrating various situations and institutional responses.

It was stressed that having clearly defined institutional guidelines and a process in place for handling allegations of scientific misconduct are critical to managing what can be extremely contentious, emotional, disruptive and potentially career-destroying ethical disputes.

In handling several hundred cases since 1992, ORI has identified some specific recurring problem areas: data recording, data retention, supervisory practices, assignment of credit for productivity, mentoring, collaborative activities, productivity requirements, and clearance procedures involving presentations, manuscripts and grant applications. ORI recommends that institutional systems of research integrity address the following specific areas: personnel, standards, training, clearance procedures, verification mechanisms, protection of whistleblowers, a process for responding to allegations, personnel policies and culture.

Other speakers noted that some of the problems facing government and industry researchers are based on policy decisions and pressures to clarify and eliminate uncertainty. Senior officials sometimes want scientists to say their research results support current policy, and frequently that's not possible. These pressures are much stronger on government and industry researchers than on academic scientists.

Finally, it is clear that there remains a major debate about the societal responsibility of scientists. On one end of the spectrum, some scientists maintain their work should remain "value free." On the other

end are those who say scientists should try to understand the possible implications of their research. Congressmen have begun to ask scientists to consider what they can do about social problems and consider the long-term impact of their research. These issues are surfacing particularly in the areas of genetics and environmental problems.

Many recent world trends are profoundly affecting the context of ethics in the research community. The end of the Cold War's impact on federal funding in the United States, the growing role of industry sponsorship of academic research, economic globalization's blending of science and engineering culture and traditions around the world, and especially recent developments in biomedical and information technology have all precipitated many new issues. Moreover, the pace of scientific discovery is breathtaking, leaving little time for society generally to absorb the implications of recent advances. All of these issues will be the focus of Sigma Xi's 2000 Forum on ethics in research.