

# Instrument

## Survey of Research Integrity Measures Utilized in Biomedical Research Laboratories

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# Survey Instrument

## Survey of Research Integrity Measures Used in Biomedical Research Laboratories

The Office of Research Integrity (ORI) of the Department of Health and Human Services is conducting a study of the procedures that principal investigators use in their biomedical research laboratories to protect the integrity of the research. ORI plans to use results from this survey to guide educational activities, organize conferences on the “Management of Biomedical Research Laboratories,” and develop training modules regarding laboratory management for the ORI website.

The American Institutes for Research (AIR) is conducting this survey on behalf of the ORI. AIR is an independent, not-for-profit research organization with more than 50 years of experience in social, behavioral, and health services research. Additional information about AIR is available at <http://www.air.org>. For this survey, AIR selected a representative sample of 5,000 researchers from among the principal investigators who have received funding from the National Institutes of Health (NIH) during the previous five years. Your completion of this survey will help make its results representative of all researchers who have received NIH grants.

Please respond as soon as possible. Responding to this survey should require about 15–20 minutes of your time. We encourage you to answer all questions but you are free to decline to answer any specific questions. Your participation in this study is entirely voluntary. There will be no payment for your participation and no consequences or loss of any benefits to which you are otherwise entitled for declining to participate.

The Paperwork Reduction Act of 1995 requires Federal government agencies to obtain a currently valid OMB control number before conducting or sponsoring any collection of information. Persons are not required to respond to any collection of information that does not display a currently valid OMB control number. The U.S. Office of Management and Budget (OMB) has reviewed and approved this survey after determining that it does not place an undue burden on respondents.

AIR’s East Coast Institutional Review Board (IRB) has reviewed and approved the protocol for this study to ensure that adequate safeguards are in place to protect your rights and privacy. AIR is taking several measures to protect the confidentiality of your responses. The software used to administer this survey does not monitor Internet Protocol (IP) addresses of survey respondents. AIR will permanently separate survey responses from any record of user identity, and will only provide aggregated information to ORI. Any documents or reports resulting from this study will only describe summary and aggregated data that cannot reveal an individual respondent’s identity.

If you have questions about this survey, comments concerning the accuracy of the time required to complete this survey, or suggestions for reducing this time, you may contact the Principal Investigator, Dr. David Rodbard, MD, at the American Institutes for Research, 1000 Thomas Jefferson Street, NW, Washington, DC 20007-3835, by phone (202) 324-5130, by Fax (202) 342-5033, or by e-mail at [nihsurvey@air.org](mailto:nihsurvey@air.org).

As you answer questions throughout the survey, please limit your responses by only considering:

- Research projects that are funded in whole or in part by the NIH,
- Research projects for which you are Principal Investigator (PI) or co-PI, and
- Research processes or practices you have been using within the past 12 months.

We provide an opportunity for you to submit your general comments at the end of this survey. Thank you for participating in this survey.

Questions 1 through 13 will use the term *primary data* to describe the most fundamental laboratory observations made in your NIH-funded research projects. Please limit your responses to your records of primary data during the past 12 months. DO NOT refer to secondary data such as computer files derived from hand-written entries in a notebook.

1. The percentage of primary data stored in hand-written entries in **loose-leaf** notebooks is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

2. The percentage of primary data stored in hand-written entries in **permanently-bound** notebooks is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

3. The percentage of primary data stored in **digital (electronic) files** is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

4. The percentage of primary data stored as **audio-visual media** (such as photographs, X-rays, video or audio recordings) is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

5. The percentage of original records of primary data that remain under my control when the researcher who generated the primary data is no longer participating in my NIH-funded research is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

6. The percentage of entries in laboratory notebooks documenting my NIH-funded research that are dated and signed by the researcher who made the entry on the day the data were collected is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

7. The percentage of entries in laboratory notebooks documenting my NIH-funded research that are signed by a witness other than the researcher making the entry is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

8. When there appears to be one or more outliers, the percentage of cases in which researchers recorded in a laboratory notebook the rationale for excluding outlier data points or an atypical experiment from an analysis is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

9. The percentage of experiments in which researchers recorded methods and primary data in sufficient detail so that an independent qualified researcher could replicate the work is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

10. The percentage of experiments in which researchers documented statistical or mathematical analyses in sufficient detail so that an independent qualified researcher could accurately replicate the calculations is:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

11. What is the minimum length of time that you and your laboratory retain primary data files when data are unlikely to be published?

*0 to 2 years.*

*3 to 4 years.*

*5 to 9 years.*

*10 to 15 years.*

*16 or more years.*

*Don't Know*

12. What is the minimum length of time that you and your laboratory retain primary data files after data have been reported in a publication?

*0 to 2 years.*

*3 to 4 years.*

*5 to 9 years.*

*10 to 15 years.*

*16 or more years.*

*Don't Know.*

13. What is the minimum length of time that you and your laboratory retain primary data files are retained after filing a patent application?

*0 to 2 years.*

*3 to 4 years.*

*5 to 9 years.*

*10 to 15 years.*

*16 or more years.*

*Don't Know.*

Questions 14 through 17 ask about meetings that typically are intended to provide a forum to discuss and critique research. Please limit your responses to meetings during the past 12 months that were:

- Regularly scheduled or publicly announced, and
- Generally open to all researchers working on your NIH-funded research projects, not just selected individuals.

14. The number of meetings I held was:

*Text box—meetings*

15. The number of hours a typical meeting lasted was:

*Text box—hours*

16. The typical researcher under my supervision presented details of his/her work during the past 12 months was:

*Text box—number of times in the past 12 months*

17. The percentage of time that our meetings focused on ongoing research results was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

Questions 18 through 24 ask about practices you used during the past 12 months to supervise activities in performing your NIH-funded research projects. The term *researchers* can include any scientists, post-doctoral fellows, and graduate students who made intellectual contributions to your research. DO NOT include persons who perform purely technical or administrative activities.

18. During the past 12 months, the average number of researchers whose research activities I directly supervised was:

*Text box—average number of researchers supervised*

19. The total number of hours (during a typical week) I usually met with each researcher I supervised was:

*Text box—hours*

20. The average number of times I visited any given researcher whom I supervise to personally observe his or her research activities was:

*Text box—times in the past 12 months*

21. The average number of times I examined laboratory notebook(s) of each researcher I supervise to determine whether critical research activities were performed in the manner I intended was:

*Text box—times in the past 12 months*

22. The average number of times that I met individually with each researcher I supervise to examine his or her primary data or preliminary research results was:

*Text box—times in the past 12 months*

23. The average number of times I checked that the resources (reagents, tissues, etc.) each researcher consumed in performing research were consistent with the reported results was:

*Text box—times in the past 12 months*

24. The percentage of time (during a typical work week) that the person with the formal title of Laboratory Director was physically present in the location in which most of my research occurs was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know*

*There is no person with a formal title of Laboratory Director*

Questions 25–27 ask about *mentoring*. The term mentoring describes a special teaching relationship in which a mentor is an experienced scientist who helps a junior scientist to become successful. DO NOT include technical or administrative staff, even though you may supervise their work. Please limit your responses to individuals who you mentored as we have defined it during the past 12 months. These are individuals:

- Whom you supervise as scientists,
- For whom you seek to optimize their educational experience, personal and professional growth, and success as a scientist, and
- For whom you make a special effort to be a role model.

25. During the past 12 months, the average number of researchers for whom I provided mentoring as defined here was:

*Text box—average number of researchers mentored*

26. In the past, I had a mentor who prepared me well to be a good mentor to the researchers whose work I supervise today.

*Strongly agree.*

*Agree.*

*Somewhat agree.*

*Somewhat disagree.*

*Disagree.*

*Strongly disagree.*

*Does not apply or do not know.*

27. On average, over the past 12 months, about how many hours *per week* did you spend mentoring scientists who are assisting you in performing your own federally funded research?

*Text box—average hours per week mentoring averaged for the past 12 months*

28. On average, over the past 12 months, about how many hours *per week* did you spend working on your own research projects (including activities such as writing grant proposals, planning studies, performing the research, reviewing results, and preparing manuscripts and presentations)?

*Text box—average hours per week conducting research averaged for the past 12 months*

29. On average, over the past 12 months, about how many hours per week did you spend on all other work-related activities (e.g., clinical practice, teaching, committee activities, reviewing manuscripts as a journal reviewer or editor, or activities with professional societies)?

*Text box—average hours per week spent on other work activities averaged for the past 12 months*

Questions 30 through 37 address issues involving manuscripts produced by members of your laboratory and related to your NIH-funded research projects. Please respond with regard to your practices over the past 12 months. DO NOT include manuscripts from outside your laboratory that you review as (for example) a reviewer for a journal or referee for a funding agency.



30. The percentage of manuscripts that clearly described the criteria for inclusion or exclusion of data was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

31. The percentage of manuscripts that included someone as an author whose only contribution was to perform repetitive or routine tasks needed to complete the research was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

32. The percentage of manuscripts for which each author signed a statement accepting shared responsibility for the complete contents of the paper was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

33. The percentage of manuscripts for which each author signed a statement acknowledging that he or she had given consent to being included as an author was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

34. The percentage of manuscripts for which each author signed a statement indicating that he or she has disclosed potential conflicts of interest was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

35. The percentage of manuscripts for which I checked at least once with the authors to evaluate the degree to which they fully understand and can defend the work the manuscript described was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

36. The percentage of manuscripts for which I examined the data for unusual patterns (such as too little scatter or unusual agreement with predicted or expected results) was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

37. The percentage of manuscripts that were given a critical review before submission for publication by a senior scientist who was NOT an author was:

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

Questions 38 through 43 ask about guidance regarding authorship and publication of manuscripts resulting from your NIH-funded research. Please choose the alternative that **best** describes the procedures you have used for projects in which you are the principal investigator in the past 12 months.

38. Criteria and procedures to determine authorship and order of authorship are best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

39. Guidance to discourage separation of a single substantive report into a series of smaller fragmentary manuscripts is best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

40. Guidance to prevent multiple submissions of a given manuscript to more than one journal at the same time is best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

41. Guidance to require evidence of reproducibility of results before submitting a manuscript for publication is best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

42. Guidance regarding procedures to correct or retract published information that is determined to be in error is best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

43. Criteria and procedures for sharing of data, methods, or reagents with competent professionals from outside the laboratory are best described as:

*Written guidelines distributed to all members of the laboratory*  
*Written guidelines distributed to some members of the laboratory*  
*Verbal guidelines discussed among all members of the laboratory*  
*Verbal guidelines discussed among some members of the laboratory*  
*None: handled separately for each individual case*

Questions 44 through 48 ask about training to promote research integrity that is provided to researchers working on your NIH-funded research work.

44. What percentage of researchers working under your supervision receive training regarding measures to promote research integrity:

*Zero percent.*  
*1 to 33 percent.*  
*34 to 66 percent.*  
*67 to 99 percent.*  
*100 percent.*  
*Don't Know*

45. Of those who did receive training, how many hours did they receive, on average?

*Text Box—hours*

46. Which training methods have been used to provide training in the area of research integrity (check all that apply):

*Formal group training in a classroom, using planned lectures or discussions.*  
 *Individual training between a senior and junior researcher.*  
 *Self-paced individual training using videotapes, web-based, or computer-assisted instruction.*  
 *Other (specify) (Text box \_\_\_\_\_)*  
 *None of the above*

47. Researchers participating in my NIH-funded projects most often receive training in research integrity from:

*Myself or another member of my research projects.*  
*Someone in my department who is NOT working on my NIH-funded research.*  
*My institution.*  
*None of the above.*

48. Upon completion of training regarding research integrity, what percentage of the researchers complete some type of assessment (such as taking an examination or writing a paper) that demonstrates their mastery of the content of the instruction?

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

Questions 49 through 61 ask about characteristics of your laboratory, your institution, and yourself. Please limit your responses to the setting in which you perform the majority of your NIH-funded research.

49. Are you considered to be a laboratory director?

*Yes, that is my official title.*

*No, the title of "laboratory director" does not apply to my position OR I do not perform the duties of a laboratory director.*

*Maybe: I perform many of the duties of a laboratory director but this is NOT my official title.*

50. In the past year, the *type of research* that best characterizes the work funded by my NIH grants was:

*Genetic/Genomic*

*Biochemical (subcellular).*

*Cell biology.*

*Organ (such as heart or liver).*

*Non-human organisms (such as chimpanzees or fruit flies).*

*Individual humans (e.g., clinical research including clinical trials).*

*Populations of humans, Epidemiology, Health Services Research*

51. The institution where I perform the majority of my research is best categorized as:

*Institution of higher education.*

*Research organization, foundation, or laboratory.*

*Independent hospital.*

*Educational organization other than higher education.*

*Other health, human resources, environmental or community organization.*

*Other.*

52. The number of years I have served as a Principal Investigator is:

*Text box (years as a Principal Investigator)*

53. The best description of the highest degrees I have been awarded that are relevant to my current research is:

*PhD only.*

*MD only.*

*Both PhD and MD.*

*Other graduate degree.*

54. The total number of applications for Federal government grants that I submitted over the past five years was:

*Text box—Number of grant applications submitted*

55. The total number of applications for Federal government grants that I have submitted during the past five years that were funded is:

*Text box—Number of grant applications funded*

56. The total number of Federal grants from which I am currently receiving funding is:

*Text box—Current number of grants*

57. The total dollar amount of grant and contract funding for total costs (direct and indirect costs) per year is:

*Text box—Total grant and contract support (dollars)*

58. What percentage of funding for total costs for your research comes from:

*The NIH.*

*DHHS organizations other than the NIH.*

*Federal government agencies other than DHHS and NIH.*

*Commercial, for-profit firms (e.g., biotechnology and pharmaceutical companies).*

*Non-profit or not-for-profit foundations*

*Other (specify) [Text Box]*

59. What percentage of your current personal income depends on funding from grants or contracts?

*Zero percent.*

*1 to 33 percent.*

*34 to 66 percent.*

*67 to 99 percent.*

*100 percent.*

*Don't Know.*

60. My gender is:

*Male.*

*Female.*

61. My age (in years) is:

*29 or less.*

*30 to 39.*

*40 to 49.*

*50 to 59.*

*60 to 69.*

*70 or greater.*

62. We would be very interested in your suggestions about measures that researchers, institutions, professional societies, journal editors and editorial boards, foundations, or government agencies could undertake to promote scientific integrity and the responsible conduct of research. Please enter your comments in the space below.

*Text box—General comments, suggestions and recommendations*

63. Would you like to make any comments to provide clarification for your answers to any of the questions given above, or do you have any comments about this questionnaire and this study, e.g., suggestions about how this study might be performed better in the future?

*Text box: "Please indicate question number and your comment"*