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NIST Scientific Integrity Program
Annual Report

Anne M. Andrews
Justyna P. Zwolak

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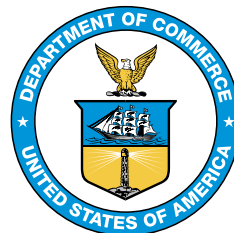
NIST Scientific Integrity Program
Annual Report

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U.S. Department of Commerce
Gina M. Raimondo, Secretary

National Institute of Standards and Technology
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Abstract

This report summarizes the findings of the National Institute of Standards and Technology Scientific Integrity Program assessment of the program for the period between 1 June 2022 and 30 September 2023. It provides an assessment of the current state of the program and activities that occurred during the program period. The report includes a summary of the baseline evaluation conducted in advance of programmatic updates in 2024.

Keywords

Assessment; Evaluation; Scientific Integrity.

Table of Contents

Executive Summary	1
1. Introduction	2
1.1. Scientific Integrity at NIST	2
1.2. Research Protections Office	2
1.3. Scientific Integrity Program Directives	3
1.3.1. Responding to Scientific Integrity Concerns	3
2. Scientific Integrity Program Initiatives	3
2.1. Committee Participation	3
2.1.1. NSTC Subcommittee on Scientific Integrity	4
2.1.2. Department of Commerce Bureau Working Group	4
2.2. Program Updates	4
2.2.1. Directives	4
3. Program Evaluation	4
3.1. Survey	4
3.2. Demographic data	5
3.3. Knowledge of the Scientific Integrity and the Research Conduct Policies	7
3.4. Beliefs About the Culture of Scientific Integrity and Ethical Conduct of Research	10
3.5. Beliefs About the Culture of Scientific Integrity at NIST	11
3.6. Beliefs About the Release of Scientific Information to the Public	12
3.7. General feedback and additional comments about SIP and RCP	13
4. Future Directions	15
5. Conclusions	15
References	16
Appendix A. 2023 Employee Survey on the NIST Scientific Integrity and Responsible Conduct of Research Programs	17

List of Tables

Table 1. Current Scientific Integrity Program Directives.	3
Table 2. Learning resources about SIP: category “other”.	8
Table 3. Respondents’ preferences for reporting instances or allegations about scien- tific integrity: category “other”.	9
Table 4. Additional comments and feedback regarding NIST’s SIP and RCP.	14

List of Figures

Fig. 1. Distribution of employment status and career path	5
Fig. 2. Distribution of pay band and supervisory status	5
Fig. 3. Distribution of years of service and highest degree earned	6
Fig. 4. Distribution of respondents' current role at NIST	7
Fig. 5. Respondents' familiarity with Scientific Integrity and the Research Conduct Policies.	7
Fig. 6. Respondents' familiarity with the process of reporting instances or allegations about scientific integrity or research misconduct.	9
Fig. 7. Beliefs about the culture of scientific integrity and ethical conduct of research.	10
Fig. 8. Beliefs about the culture of scientific integrity at NIST.	11
Fig. 9. Beliefs about the release of scientific information to the public.	12
Fig. 10 Distribution of respondents' prior training on how to communicate scientific topics to the media.	13

Executive Summary

The National Institute of Standards and Technology (NIST) Scientific Integrity Program was formally established in policy in 2011. This annual report provides a summary of activities and updates about the program status for the period between 1 June 2022 and 30 September 2023. The program directives have been updated and are undergoing institutional review. They are expected to be finalized by February 2024. As part of an ongoing program evaluation, an online survey was sent to all staff to assess baseline awareness of the Scientific Integrity Program. The survey's main findings demonstrate a desire and need for updated directives and awareness training. Finally, the Scientific Integrity Officer (SIO) pilot tested an awareness training and will begin implementing it in FY24.

1. Introduction

1.1. Scientific Integrity at NIST

It is NIST's policy to promote scientific integrity by creating a culture of personal and organizational responsibility where the practice and management of scientific research and its products are free from undue influences that are not essential to the practice of science, such as personal or social allegiances, beliefs, or interests. NIST's dedication to scientific integrity is highlighted with this assertion on the internal website: *NIST is an organization with strong values, reflected both in our history and our current work.* NIST leadership and staff will uphold these values to ensure a high-performing environment that is safe and respectful of all.

Perseverance: We take the long view, planning the future with scientific knowledge and imagination to ensure continued impact and relevance for our stakeholders.

Integrity: We are ethical, honest, independent, and provide an objective perspective.

Inclusivity: We work collaboratively to harness the diversity of people and ideas, both inside and outside of NIST, to attain the best solutions to multidisciplinary challenges.

Excellence: We apply rigor and critical thinking to achieve world-class results and continuous improvement in everything we do.

1.2. Research Protections Office

The Research Protections Office (RPO) is dedicated to supporting NIST researchers and ensuring their research is conducted with integrity. With this goal in mind, the RPO coordinates and implements several research compliance programs at NIST, including the Human Research Protections Program, the Humane Care and Treatment of Vertebrate Animals Program, the Export Control and Compliance Program, and the Scientific Integrity Program. Like the NIST cultural foundation of scientific integrity, scientific integrity principles are woven into each of the RPO programs. Program managers and staff work together to ensure the principles are easily understood by NIST staff members and are harmonized with other programs across NIST. In addition, RPO staff serve as members on a variety of federal committees and working groups to advance the programs.

The RPO supports the Scientific Integrity Program with two staff members. The RPO Director serves as the NIST SIO. The Research Protections Analyst assists with Scientific Integrity Program management. In addition, the Scientific Integrity Program includes a NIST staff expert in program evaluation and survey methodology. The Associate Director for Laboratory Programs serves as the Chief Science Officer (CSO) and oversees the Scientific Integrity Program.

1.3. Scientific Integrity Program Directives

NIST’s Scientific Integrity Program directives are based on direction and guidance found in:

- 2009 Presidential Memorandum [1],
- 2010 OSTP Memorandum [2],
- 2021 Presidential Memorandum [3],
- the 2022 National Science and Technology Council Report of the Scientific Integrity Fast Track Action Committee, Protecting the Integrity of Government Science (SI-FTAC Report) [4],
- the 2023 Framework for Federal Scientific Integrity Policy and Practice [5].

NIST handles allegations related to violations of scientific integrity and research misconduct under separate policies. In addition, NIST developed guidance specific to authorship separate from research misconduct unless concerns extend to the broader context of one or more of the other policies. Table 1 contains the list of current Scientific Integrity Program policies. All policies are currently under review and will be updated in 2024.

Table 1. Current Scientific Integrity Program Directives.

Number	Title	Updated
P ^a 5100.00	Scientific Integrity Policy	2011
O ^b 5100.00	Scientific Integrity	2019
PR ^c 5101.01	Reporting and Resolving Allegations Regarding Violations of Scientific Integrity	2014
P 5200.00	Responsible Conduct of Research	2014
O 5201.00	Responsible Conduct of Research Order	2019
PR 5201.01	Procedures in Response to Allegations of Research Misconduct	2014
G ^d 5201.01	Guidance for Authorship of Scholarly and Technical Publications	2018

^aP=Policy; ^bO=Order; ^cPR=Procedure; ^dG=Guidance

1.3.1. Responding to Scientific Integrity Concerns

Between 1 June 2022 and 30 September 2023, one allegation and two questions about policy procedures were forwarded to the SIO. The allegation was dismissed as it was a difference of scientific opinion rather than a violation of scientific integrity.

2. Scientific Integrity Program Initiatives

2.1. Committee Participation

The NIST SIO actively participated in several committees that will help strengthen scientific integrity across the Federal government, the Department of Commerce, and NIST.

2.1.1. NSTC Subcommittee on Scientific Integrity

NIST is well-represented on the National Science and Technology Council (NSTC) Subcommittee on Scientific Integrity (SOSI). The NIST SIO was a co-chair of the Policy and Assessment Working Group and was elected by the SOSI members to serve as a SOSI co-chair. One staff member is a member of the Survey Working Group. Two staff members serve as Executive Secretaries for SOSI. One staff member serves on the Implementation and Evaluation Working Group.

2.1.2. Department of Commerce Bureau Working Group

This group developed the Department's scientific integrity policy that will apply to the entire Department while also supporting the established policies at NIST and the National Oceanic and Atmospheric Administration (NOAA).

The NIST SIO is a member of this group.

2.2. Program Updates

2.2.1. Directives

The NIST directives were updated and are awaiting approval from the NIST Directives Review Board.

3. Program Evaluation

A baseline evaluation of the program was conducted in May 2023 and included a survey of NIST staff. The purpose of the baseline evaluation was to get a sense of the current staff's awareness before implementing planned updates. In addition, it served to identify areas where the program needs to focus or improve.

3.1. Survey

The survey, sent by email with an invitation from the Associate Director for Laboratory Programs, was open to all staff. The survey remained open for three weeks, with a reminder sent one week before the closing date.

Of 3,416 Federal employees and 4,646 Associates included in the NIST Federal Workforce database, 373 Federal and 33 non-Federal respondents completed the survey, resulting in 10.9% and 0.7% response rates, respectively. Since the participants were not required to answer any of the questions, a survey was considered completed whenever the participant selected the *Submit* button, regardless of how many questions were answered. Thus, since none of the survey questions were mandatory and some questions allowed for multiple answers, the number of responses varied slightly for some of the survey questions. The

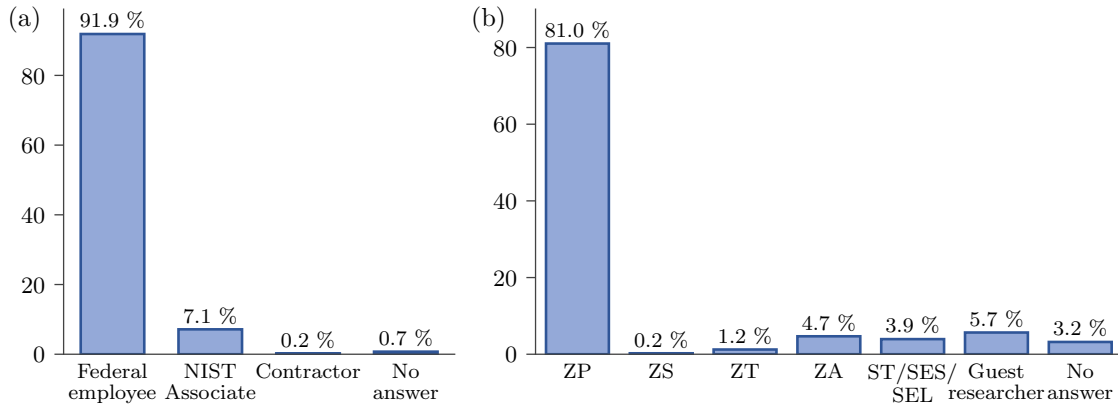


Fig. 1. (a) The overall distribution of respondents' employment status. (b) The overall distribution of respondents' career path.

survey questions were answered by at least 97.5 % of respondents, while the demographic questions, included at the end of the survey, were responded to by at least 94.8 %. The discussion presented in this section represents the data from all $N_{tot} = 406$ participants. For questions where the non-response rate is not included in a figure the appropriate "No answer" count N_{na} is given in the associated figure caption.

3.2. Demographic data

The majority of participants, at about 92 %, were federal employees, followed by a small number – about 7 % – of NIST associates, including guest researchers and retired associates; see Fig. 1(a). Contractors and respondents who left this question unanswered accounted for less than 1 %.

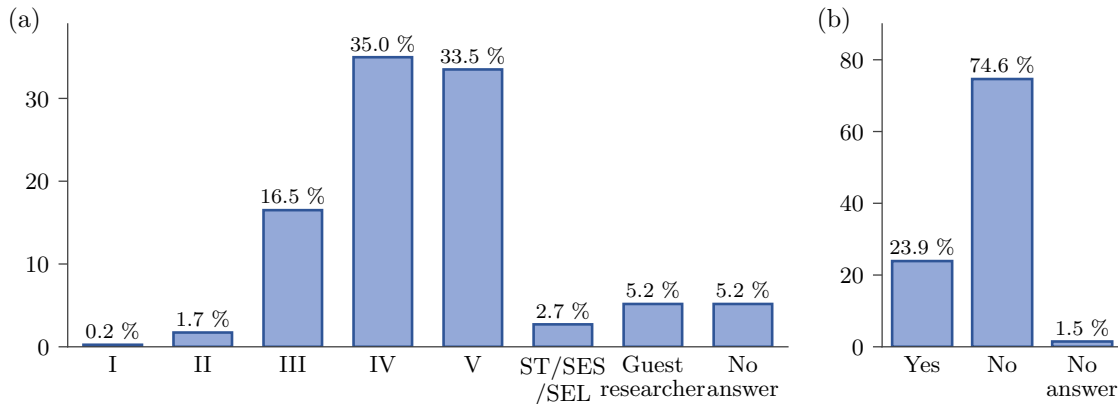


Fig. 2. (a) The overall distribution of the current pay band at NIST. (b) The overall distribution of the supervisory status.

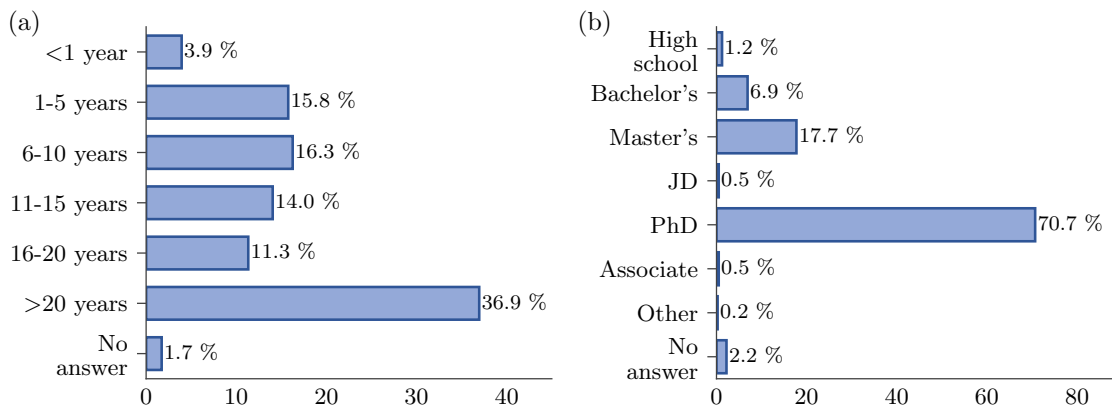


Fig. 3. (a) The overall distribution of the years of service at NIST, including student, contractor, associate, and federal employee status. (b) The overall distribution of the highest degree earned.

Participants were also asked to identify their current career path; see Fig. 1(b), and pay band level; see Fig. 2(a). The large majority, almost 81 % of respondents, are in the ZP (Scientific and Engineering Staff) category, followed by guest researchers at about 6 %, the ZA (Administrative Staff) category at about 5 %, and the ST/SES/SEL (Scientific or Professional, Senior Executive Service, Senior Level) respondents at 4 %.

Pay band level only applies to those in ZA, ZP, ZT (Scientific and Engineering Technician), and ZS (Administrative Support) career paths. The majority of respondents are in pay bands IV and V, at almost 35 % and 33.5 %, respectively. Employees in pay band III accounted for 16.5 % respondents. Almost 75 % of respondents are in non-supervisory status; see Fig. 2(b).

Most participants, at almost 37 %, reported having over 20 years of service at NIST; see Fig. 3(a). About 32 % of respondents reported being at NIST between one and ten years and about 25 % of respondents reported between 11 and 20 years of service.

A degree-specific demographic question was asked regarding the participants' highest level of education; see Fig. 3(b). The highest degree reported by participants was a PhD at 71.0 %, followed by a Master's degree at a little over 17 % and a Bachelor's degree at nearly 7 %.

When asked about their current role at NIST, over 77 % of respondents selected *Conduct science through original research or analysis of existing data*; see Fig. 4. *Communicate science through any type of media* and *Manage science, scientists, or technical activities involving personnel performing these tasks* were selected by nearly 40 % of respondents. Since this was a multiple-choice question where respondents were asked to check all statements that describe their role at NIST, the percentages for this question do not add up to 100 %.

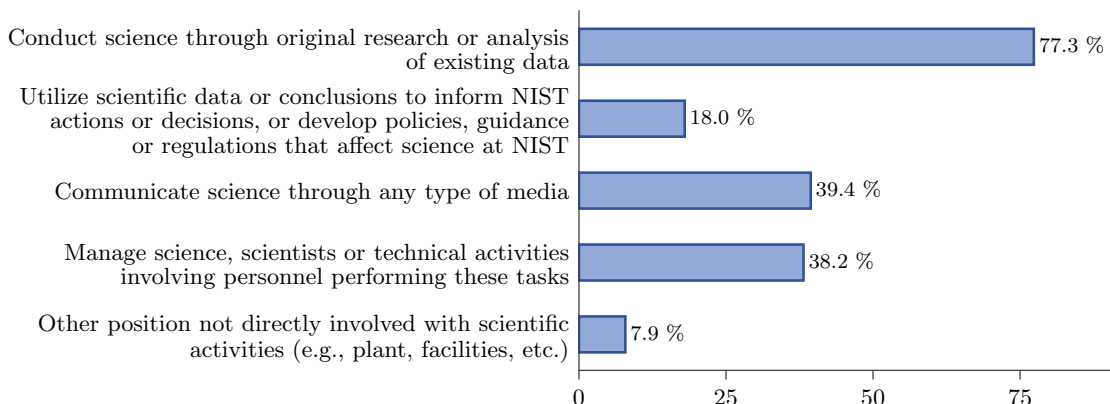


Fig. 4. The distribution of respondents' current role at NIST. This was a multiple-choice question where respondents were asked to check all statements describing their role at NIST; thus, the percentages do not add up to 100 %.

3.3. Knowledge of the Scientific Integrity and the Research Conduct Policies

The first two sets of survey questions pertained to the respondents' knowledge of the Scientific Integrity Policy (SIP) and the Research Conduct Policy (RCP) as well as their attitudes toward handling allegations related to scientific integrity and research misconduct (see Appendix A for a complete list of survey questions). Figure 5(a), showing a comparison of responses to questions about the respondents' familiarity with SIP and RCP, indicates that slightly more responses were aware of the RCP than of the SIP, at about 56 % vs. 50 %, respectively.

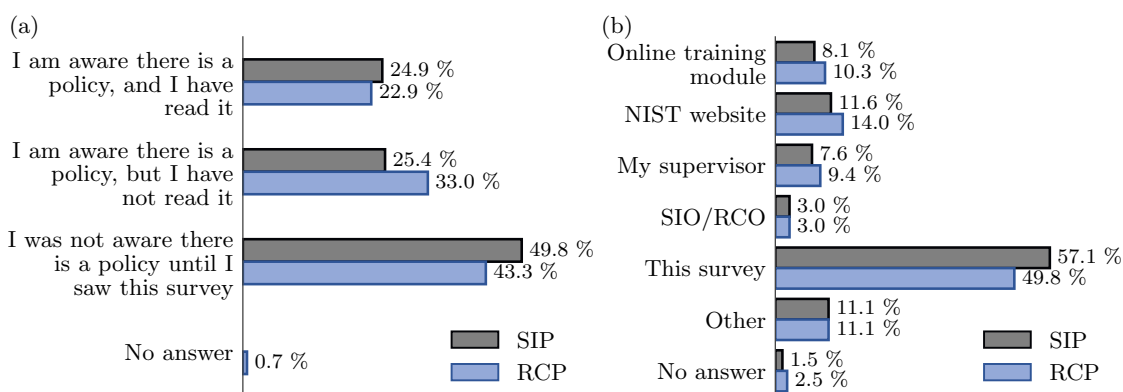


Fig. 5. (a) A comparison of responses to questions about the respondents' familiarity with the Scientific Integrity Policy (SIP) and the Research Conduct Policy (RCP) (b) The distribution of reported learning resources about the SIP and RCP.

Table 2. Summary of responses given as part of the *other* option to question about learning resources about SIP (second column, $N_{tot} = 43$ responses) and RCP (last column, $N_{tot} = 44$ responses); see Fig. 5.

Description	SIP	RCP
General knowledge	9.3 %	11.4 %
Assumed there was one	4.7 %	6.8 %
Involved in development	7.0 %	4.5 %
Onboarding / Training	7.0 %	9.1 %
Colleagues	9.3 %	9.1 %
NIST internal communication (email, etc.)	14.0 %	9.1 %
History talk at NIST	7.0 %	4.5 %
OU/Division meeting	9.3 %	4.5 %
ERB	4.7 %	0.0 %
Authorship / Research conduct dispute	0.0 %	4.5 %
Can't remember	16.3 %	20.5 %
Miscellaneous	11.6 %	15.9 %

Out of those who reported being aware of these policies, the majority of respondents reported learning about them from the *NIST website* (23.3 % for SIP, 24.9 % for RCP). The *online training module* and *supervisors* were the second and third most frequently reported resource, at 16.3 % and 15.3 %, respectively, for SIP and 18.7 % and 16.9 %, respectively, for RCP. About a fifth of respondents (21.3 % for SIP and 19.1 % for RCP) reported using other sources to learn about these policies. Only about 5 % or respondents reported as a learning reference the Scientific Integrity Officer or Research Conduct Officer.

Table 2 gives a summary of responses given as part of the *other* option to the question about learning resources about SIP and RCP. For the SIP, the most commonly reported source of information was NIST internal communication (14 %), followed by learning from colleagues or during OU or Division meetings, both at 9.3 %. The OU or Division meetings category includes internal presentations and resolving an issue of potential scientific integrity within one of the respondent's division. In 9.3 % of responses awareness of federal requirements was stated as general knowledge. The miscellaneous responses to the question about SIP include learning from a mentor, during a Town Hall, and through personal interest.

For RCP, the most common source reported among the *other* options was general knowledge, at 11.4%. Onboarding or training, NIST colleagues, and NIST internal communication were listed in 9.1 % of responses. Two respondents reported learning about RCP through personal experience, one dealing with an authorship dispute and the other one through a potential issue of research misconduct in the division. The miscellaneous responses include learning from a mentor, during Town Hall, personal interest, and also during the IRB application process.

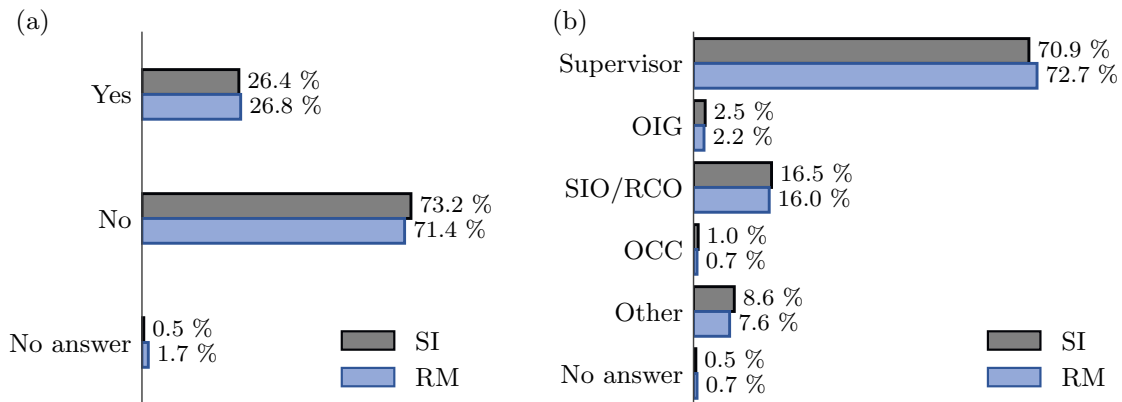


Fig. 6. (a) A comparison of responses to questions about the respondents' familiarity with the process of reporting instances or allegations about scientific integrity (SI) or research misconduct (RM). (b) Respondents' preferences for reporting instances or allegations about scientific integrity or research misconduct. The never-selected option *Union* has been removed for clarity.

When it comes to reporting allegations, over 70 % of respondents stated they do not know how to report instances or allegations about scientific integrity (SI) or research misconduct (RM); see Fig. 6(a). A little over 68 % of participants responded *no* to both questions. Over 90 % of respondents indicated they would feel comfortable reporting instances or allegations about SI or RM. This held regardless of whether they knew the formal procedure for such reports. The majority of respondents would choose to report the SI- and RM-related issues to their supervisor (about 70 %) A little over 16 % of participants selected the Scientific Integrity Officer/Research Conduct Officer (SIO/RCO), and a little over 2 % the Office of Inspector General (OIG). The Office of Chief Counsel (OCC) was selected by no more than 1 % of respondents.

Table 3. Summary of responses given as part of the *other* option to question about respondents' preferences for reporting instances or allegations about scientific integrity (SI, second columns, $N_{tot} = 29$ responses) and research misconduct (RM, last column, $N_{tot} = 25$ responses); see Fig. 6.

Description	SI	RM
Anonymous comment	6.9 %	8.0 %
A combination of or all listed options	27.6 %	28.0 %
Ombudsman	6.9 %	8.0 %
Division Chief or OU Director	6.9 %	8.0 %
Depends on circumstances	13.8 %	16.0 %
No one / Not comfortable reporting	24.1 %	24.0 %
Miscellaneous	13.8 %	8.0 %

Table 3 gives a summary of responses given as part of the *other* option to the question about respondents' preferences for reporting instances or allegations about scientific integrity or research misconduct. For both, SI and RM, the most commonly reported answer was *A combination of or all listed options*, at 27.6 % for SI and 28.0 % for RM (note that this was a single-answer question and thus the respondents were not able to directly indicate more than one option). The second most common answer was *No one / Not comfortable reporting*, at 14.1 % for SI and 24.0 % for RM. The respondents in this category expressed concerns about the potential ramifications reporting would have on them. One respondent stated they have lost trust in NIST to act against misconduct as they have seen multiple reports of misconduct ignored in the past. While some respondents indicated they would go to their own Division Chief or OU Director (6.9 % for SI and 8.0 % for RM), one respondent stated they would instead report to the direct supervisor of the person they suspect of SI misconduct and another one expressed concern reporting to their own management. The miscellaneous category includes trusted colleagues and coworkers free of conflicts.

3.4. Beliefs About the Culture of Scientific Integrity and Ethical Conduct of Research

When asked about their beliefs about the culture of scientific integrity and ethical conduct of research, the vast majority of participants agreed that the work of NIST is informed by robust science (over 90 %, with over 60 % of respondents reporting strong agreement) and that scientists can do their best work knowing they are protected from intimidation or coercion to alter scientific data or findings (over 85 %, with nearly 60 % of respondents reporting strong agreement); see Fig. 7. About 5 % of respondents reported neutral opinion to these two questions while 2.7 % expressed having no basis to judge or lack of opinion about the first question and 5.2 % about the second question.

Slightly fewer respondents, a little over 70 %, believe that at NIST scientific findings are generated, reviewed, and shared in a timely manner, with only about a quarter of respondents expressing strong beliefs, nearly 15 % remaining neutral about this question, and 4.4 % reporting having no basis to judge or lack of opinion. The least positive beliefs were

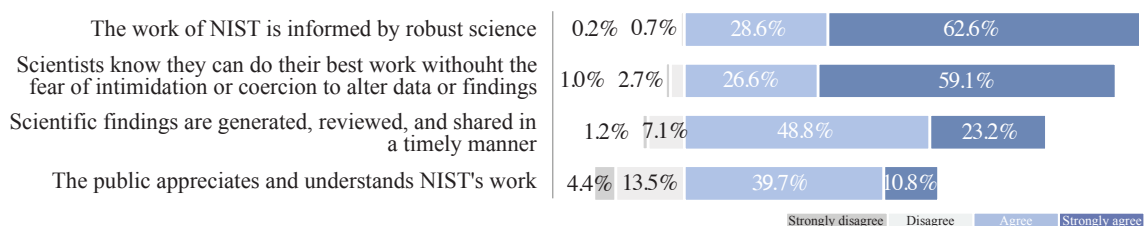


Fig. 7. Beliefs about the culture of scientific integrity and ethical conduct of research ($N_{na} = 2$ for the first third and fourth question and $N_{na} = 1$ for the second questions). The neutral, no basis for judgment, and missing answers are not included for clarity and thus the percentages do not add up to 100 %.

expressed regarding the public’s appreciation and understanding of NIST’s work. Here, about 50 % of respondents reported positive beliefs, with only about 10 % reporting strong agreement, and almost 27 % reporting neutral beliefs. No basis to judge or lack of opinion was expressed by 4.4 % of respondents.

The non-response rate for this set of questions, as well as for questions presented in Section 3.5 and in Section 3.7, was no more than 1 %.

3.5. Beliefs About the Culture of Scientific Integrity at NIST

The next set of questions pertained to the respondents’ beliefs about the culture of scientific integrity at NIST. About 80 % of participants believe they have the right to review, correct, and approve before public dissemination the scientific content of a NIST document that significantly relies on their scientific research, represents their scientific opinion, or identifies them as an author; see Fig. 8. Only 3.4 % of respondents remained neutral about this question and 10.3 % stated they have no basis for judgment or don’t know.

Also about 80 % of respondents agreed that they can express their personal scientific views provided that they specify they are not speaking on behalf of, or as a representative of, the NIST. About three-quarters of the respondents agreed that they can freely and openly express, in their official capacity, their scientific opinions about NIST’s scientific work without fear of retaliation. A little under 10 % of respondents expressed neutral opinion about these two questions and no opinion was reported by 5.4 % for the question about speaking personally and by 7.1 % for the question about speaking in an official capacity.

Fewer respondents, at about 64 %, agree that the scientific or technical products to which they contribute are released to the public in a timely fashion, with almost 20 % remaining

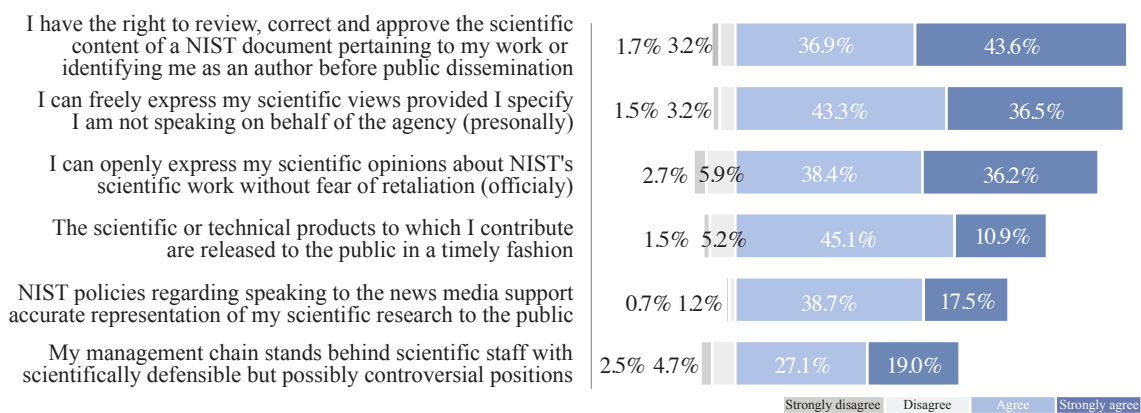


Fig. 8. Beliefs about the culture of scientific integrity at NIST ($N_{na} = 3$ for the first question, $N_{na} = 2$ for the second and fifth question, $N_{na} = 1$ for the third and fourth question, and $N_{na} = 0$ the last question). The neutral, no basis for judgment, and missing answers are not included for clarity and thus the percentages do not add up to 100 %.

neutral about this question and 10.1 % reporting no basis for judgment or not knowing. Respondents were also less positive in their beliefs about NIST policies regarding speaking to the news media supporting the accurate representation of their scientific research to the general public, with about 56 % of respondents agreeing with this statement, 11.1 % remaining neutral, and 30.3 % stating no basis for judgment or not knowing.

Finally, only about 46 % of respondents agree that their management chain consistently stands behind scientific staff who put forth scientifically defensible positions that may be controversial. For this question, 12.1 % of respondents remained neutral while almost 35 % stated no basis for judgment or not knowing.

3.6. Beliefs About the Release of Scientific Information to the Public

The last set of questions concerned respondents' beliefs about the release of scientific information to the public. Nearly three-quarters of respondents agree that they are provided with the appropriate time and encouragement to keep up with advances in their profession, including attending conferences and participating in scientific or professional societies; see Fig. 9. A little under 13 % remained neutral and 4.4 % reported no basis for judgment or not knowing. About half of the respondents agreed that in their office the process for deciding who can attend and participate in meetings sponsored by scientific or professional societies is transparent, with 20.0 % remaining neutral about this question and 11.8 % expressing no basis for judgment or lack of knowledge about the process.

About 60 % of respondents agreed that the clearance procedure for scientific papers is transparent and that the Editorial Review Board process is consistent. About 14 % of respondents reported no basis for judgment or not knowing whether the clearance procedure is transparent and the review process consistent while 16.3 % of respondents remained neutral about the former question and 15.0 % about the latter one. However, only a little over a quarter of respondents agree that they can accurately predict the amount of

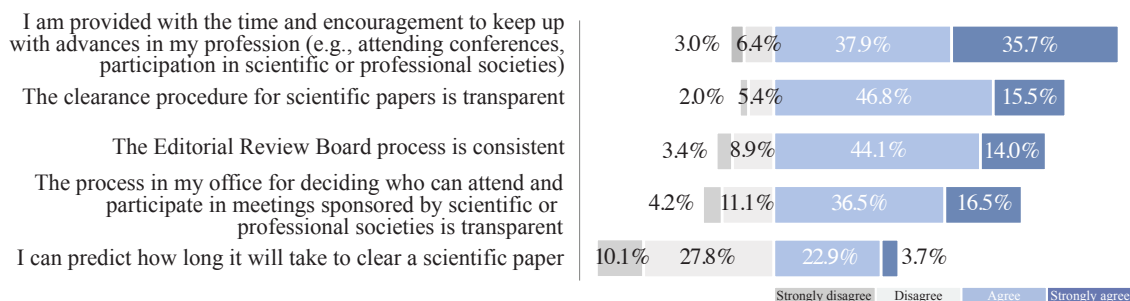


Fig. 9. Beliefs about the release of scientific information to the public ($N_{na} = 4$ for the last question, $N_{na} = 2$ for the second and third question, and $N_{na} = 0$ for the first and fourth question). The neutral, no basis for judgment, and missing answers are not included for clarity and thus the percentages do not add up to 100 %.



Fig. 10. The distribution of respondents' prior training on how to communicate scientific topics to the media ($N_{na} = 2$). This was a multiple-choice question where respondents were asked to check all statements describing their role at NIST; thus, the percentages do not add up to 100 %.

time it will take to clear a scientific paper, with 21.9 % of respondents remaining neutral and 12.6 % expressing no basis for judgment or not knowing.

In addition to the Likert-style question, respondents were also asked to indicate whether they have had any training on how to communicate scientific topics to the media. The vast majority of respondents, at almost 64 %, reported not receiving any training; see Fig. 10. Out of those who reported receiving training, most respondents indicated training at NIST (20.4 %) or through an academic institution (7.9 %). About 9 % of respondents stated that communicating scientific topics to the media is not part of their official duties at NIST, though over 60 % of them reported taking some form of training.

3.7. General feedback and additional comments about SIP and RCP

In addition to answering survey questions, the respondents were given an opportunity to provide general comments and feedback about NIST's SIP and RCP. Table 4 gives a summary of the most common categories for both questions.

The most common theme in the open-ended questions was a request for more training about both policies. As one respondent pointed out, *all scientific and engineering employees (ZP pay bands) should be required to learn about the Scientific Integrity Policy. Informing employees of their rights and responsibilities should include how to report wrongdoing without fear of reprisal.* Respondents also asked for resources that would present these policies in a more accessible format, such as a course on the Commerce Learning Center or via iNET, and should be included as part of the annual training requirements.

For SIP, complaints about NIST having unwritten rules and procedures that go against the policy were the second most common theme. Several respondents expressed concerns

Table 4. Summary of responses given to the two open questions asking about additional comments and feedback regarding NIST’s SIP (second columns, $N_{tot} = 80$ responses) and RCP (last column, $N_{tot} = 53$ responses).

Description	SIP	RCP
Bad experience reporting issues with SI and/or RM	3.8 %	0.0 %
NIST has unwritten rules and procedures that go against SIP and/or RCP	12.5 %	9.4 %
NIST culture strongly encourages scientific integrity and ethical conduct	5.0 %	0.0 %
Policy feedback	7.5 %	11.3 %
Bad experience with ERB process	3.8 %	0.0 %
General ERB feedback	6.3 %	1.9 %
Authorship issues / Guideline request	5.0 %	5.7 %
Feedback related to training/resources availability and accessibility	20.0 %	26.4 %
Survey design feedback	2.5 %	0.0 %
Feedback on releasing research to the public	3.8 %	3.8 %
None	6.3 %	9.4 %
Miscellaneous	23.8 %	32.1 %

about supervisors being disinterested in *setting the tone for integrity* and federal employees feeling *protected by the lack of possible demotion in the organization structure and difficulty with instating real and meaningful repercussions* and assuming that a long tenure at NIST exempts them from following rules.

When it comes to authorship issues, several respondents brought up issues with *recent changes in policy for authorship by contractors working at NIST* which they found to be *contrary to ethical principles of properly crediting where published work was done*. One respondent noted that *associates are not able to serve as Principal Investigators and not able to independently publish any research*. They stated that their supervisor informed them that *an associate is required to designate a federal employee as the PI and include a federal employee as a coauthor, regardless of contribution to the research* and that *a federal employee may be required to remove mentions of associates name in proposals, research agreements (including grants and data sharing), and presentations for work originating from and conducted by the associate*. As pointed out by this respondent, *such conditions present significant challenges to maintaining scientific integrity and introduces risks to the conduct, reporting, and reliability of research*.

On a related note, several respondents reported issues with supervisors and those *above [the respondent] in the chain of command* demanding to be included in the authors list for a paper even though they *did NO writing, analysis, data collection, experimentation, test setup, design of the project*. Another participant stated that *there [is] still management pressure to include others in the author list*. It has also been pointed out that *NIST scientists are under quite a lot of pressure to produce publications because awards, bonuses, promotions, etc. are given out largely based on publication record which creates incentives to publish that are not in line with the scientific integrity and research conduct policies*. This

perspective was echoed by a respondent who stated that *the pressure to get results published in high profile venues to positively impact performance evaluations and promotions is one of the biggest threats to scientific integrity as it pushes employees to talk about [one's] research, ideas, etc. to management as being more impactful than they actually might be so one can be competitive for things like IMS funding.*

In general, respondents expressed disappointment with how the ERB process is being handled, saying that it is *poorly aligned with current academic publishing practices, and provides almost no value to basic research publication, too slow, and that reviewers are chosen based on ease of review and turnaround time, not scientific expertise.* A request for *clear authorship guidelines that would include language on who should be included in publications* and that would be enforced was a recurring theme.

4. Future Directions

The program evaluation highlighted several areas where the program could be improved and more guidance would be helpful. The baseline assessment validated our assumption that while staff believe scientific integrity is important at NIST, they are not familiar with our established program. The SIO will finalize the awareness training program and begin deployment in FY24. In addition, the SIO and SIP team will work with the SOSI to develop and implementation and evaluation plan by the end of FY24.

5. Conclusions

NIST's dedication to integrity is strong. While it is clear that NIST staff are dedicated to upholding scientific integrity, it is also clear that our policies need to be updated and socialized within the agency. The SIO will continue the planned updates and begin an awareness campaign to engage staff in the program.

References

- [1] The White House (2009) Presidential memorandum for the heads of executive departments and agencies on scientific integrity (Washington, DC), Memorandum. Published 2009-03-09 Available at <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>.
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- [3] The White House (2021) Presidential memorandum on restoring trust in government through scientific integrity and evidence-based policymaking (Washington, DC), Memorandum. Published 2021-01-27 Available at <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/>.
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- [5] The White House Office of Science and Technology Policy (2023) A framework for federal scientific integrity policy and practice (Washington, DC), Framework. Published 2023-01-12 Available at <https://www.whitehouse.gov/ostp/news-updates/2023/01/12/ostp-releases-framework-for-strengthening-federal-scientific-integrity-policies-and-practices/>.

Appendix A. 2023 Employee Survey on the NIST Scientific Integrity and Responsible Conduct of Research Programs

We would appreciate your time in completing this survey on NIST's Scientific Integrity and Research Programs.

NIST has separate directives in support of the Scientific Integrity Policy (NIST P 5100, first issued in 2011) and Responsible Conduct of Research (NIST P 5200, first issued in 2014). The purpose of this survey is to assess NIST staff's understanding of both sets of policies. The results of this survey will be shared with NIST leadership and will be used to inform the programs.

No identifying information about you will be collected. Survey data will be summarized, and aggregated results will be included in presentations and publications which may be shared with NIST management, staff and the public. The raw, individual data will be accessed only by the team administering this survey, which is led by Anne Andrews.

The survey is completely voluntary. If you have any questions, please contact Anne Andrews, PhD, Director, Research Protections Office, and also NIST Scientific Integrity Officer. anne.andrews@nist.gov or 301.975.5445

OMB Control # 0693-0033
Expiration Date 09/30/2025

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0693-0033. Without this approval, we could not conduct this survey/information collection. Public reporting for this information collection is estimated to be approximately 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the NIST at: 100 Bureau Drive, Gaithersburg, MD 20899, ATTN: Anne Andrews.

1. Which statement below best describes your current role at NIST? *Check all that apply.*

- ☐ Conduct science through original research or analysis of existing data
- ☐ Utilize scientific data or conclusions to inform NIST actions or decisions, or develop policies, guidance or regulations that affect science at NIST
- ☐ Communicate science through any type of media
- ☐ Manage science, scientists or technical activities involving personnel performing these tasks

- ☐ Other position not directly involved with scientific activities (e.g., plant, facilities, etc.)

Knowledge of Scientific Integrity Policy

It is NIST Policy to promote scientific integrity by creating a culture of personal and organizational responsibility where the practice and management of scientific research and of its products are free from personal, political or social allegiances, beliefs or interests that are not essential to the practice of science.

2. How familiar are you with NIST's Scientific Integrity Policy? *Mark only one.*

- ☐ I am aware there is a policy, but have not read it
- ☐ I am aware there is a policy, and I have read it
- ☐ I was not aware there is a policy until I saw this survey

3. How did you learn about the Scientific Integrity Policy? *Mark only one.*

- ☐ Online training module
- ☐ NIST website
- ☐ My supervisor
- ☐ Scientific Integrity Officer/Research Conduct Officer
- ☐ This survey
- ☐ Other: _____

4. Do you know how to report instances or allegations about scientific integrity? *Mark only one.*

- ☐ Yes
- ☐ No

5. To whom would you feel comfortable reporting instances or allegations about scientific integrity? *Mark only one.*

- ☐ Supervisor
- ☐ Union
- ☐ Office of Inspector General (OIG)
- ☐ Scientific Integrity Officer/Research Conduct Officer
- ☐ Office of Chief Counsel
- ☐ Other: _____

Knowledge of Research Conduct Policy

It is NIST Policy to strive for and promote excellence and rigor in its research activities. Research misconduct is defined as the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. It does not include honest error or differences of opinion.

6. How familiar are you with NIST's Research Conduct Policy? *Mark only one.*

- ☐ I am aware there is a policy, but have not read it
- ☐ I am aware there is a policy, and I have read it
- ☐ I was not aware there is a policy until I saw this survey

7. How did you learn about the Research Conduct Policy? *Mark only one.*

- ☐ Online training module
- ☐ NIST website
- ☐ My supervisor
- ☐ Scientific Integrity Officer/Research Conduct Officer
- ☐ This survey
- ☐ Other: _____

8. Do you know how to report instances or allegations of research misconduct? *Mark only one.*

- ☐ Yes
- ☐ No

9. To whom would you feel comfortable reporting instances or allegations of research misconduct? *Mark only one.*

- ☐ Supervisor
- ☐ Union
- ☐ Office of Inspector General (OIG)
- ☐ Scientific Integrity Officer/Research Conduct Officer
- ☐ Office of Chief Counsel
- ☐ Other: _____

Beliefs about culture of scientific integrity and ethical conduct of research

Please indicate to what extent you agree or disagree with the following statements.

10. The work of NIST is informed by robust science. *Mark only one.*

- ☐ Strongly agree
- ☐ Agree
- ☐ Neutral

- Disagree
- Strongly Disagree
- No basis to judge or don't know

11. Scientific findings are generated, reviewed, and shared in a timely manner. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

12. The public appreciates and understands NIST's work. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

13. Scientists are able to do their best work knowing they are protected from intimidation or coercion to alter scientific data or findings. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

Beliefs about culture of scientific integrity at NIST

Please indicate to what extent you agree or disagree with the following statements

14. In my official capacity at NIST, I can openly express my scientific opinions about NIST's scientific work without fear of retaliation. *Mark only one.*

- Strongly agree
- Agree
- Neutral

- Disagree
- Strongly Disagree
- No basis to judge or don't know

15. In my personal capacity, I can freely express my scientific views provided I specify that I am not speaking on behalf of, or as a representative of, the agency. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

16. My management chain consistently stands behind scientific staff who put forth scientifically defensible positions that may be controversial. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

17. I have the right to review, correct and approve the scientific content of a NIST document, before public dissemination, that significantly relies on my scientific research, identifies me as an author, or represents my scientific opinion. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

18. The scientific or technical products to which I contribute are released to the public in a timely fashion. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

- No basis to judge or don't know

19. NIST policies regarding speaking to the news media support accurate representation of my scientific research to the general public. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

Beliefs about release of scientific information to the public

Please indicate to what extent you agree or disagree with the following statements

20. The Editorial Review Board process is consistent. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

21. The clearance procedure for scientific papers is transparent. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

22. I can accurately predict the amount of time it will take to clear a scientific paper. *Mark only one.*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No basis to judge or don't know

23. The process in my office for deciding who can attend and participate in meetings sponsored by scientific or professional societies is transparent. *Mark only one.*

- ☐ Strongly agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree
- ☐ No basis to judge or don't know

24. I am provided with the appropriate time and encouragement to keep up with advances in my profession, including attending conferences and participation in scientific or professional societies. *Mark only one.*

- ☐ Strongly agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree
- ☐ No basis to judge or don't know

25. If you have had training on how to communicate scientific topics to the media, please indicate where you received that training (select all that apply): *Mark only one.*

- ☐ Through training at NIST
- ☐ Through training at another federal organization
- ☐ Through a professional society
- ☐ Through an academic institution
- ☐ Communicating scientific topics to the media is not something my job requires me to do
- ☐ Other training elsewhere
- ☐ I have not received training

Comments

Please use this section to provide any comments or thoughts. However, please do not provide any sensitive information such as personally identifiable information or allegations. Please contact Anne Andrews, anne.andrews@nist.gov, to discuss anything sensitive or potential allegations.

26. Do you have any additional comments about NIST's Scientific Integrity Policy that you would like to include?

27. Do you have any additional comments about NIST's Research Conduct Policy that you would like to include?

Demographic Information

28. What is your employment status? *Mark only one.*

- ☐ Federal employee
- ☐ NIST Associate
- ☐ Contractor
- ☐ Other: _____

29. What is your career path? *Mark only one.*

- ☐ ZP
- ☐ ZS
- ☐ ZT
- ☐ ZA
- ☐ ST/SES/SEL
- ☐ Other: _____

30. What is your band? *Mark only one.*

- ☐ I
- ☐ II
- ☐ III
- ☐ IV
- ☐ V
- ☐ Other: _____

31. How many years have you worked at NIST in any capacity? This can include positions such as student, contractor, Associate or Federal employee. *Mark only one.*

- ☐ <1 year
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ 16-20 years

- >20 years

32. What is your highest level of education? *Mark only one.*

- High school
- Bachelor's
- Master's
- JD
- PhD
- Other: _____

33. Are you a supervisor? *Mark only one.*

- Yes
- No

Thank you

Thank you for your time completing this survey. Summary results of this survey will be shared with NIST leadership and posted to the NIST webpage.