USDA
United States Department of Agriculture

Reviewing the Integrity of USDA's Scientific Research Program

Audit Report 50601-0006-31

February 2018

OFFICE OF INSPECTOR GENERAL

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OIG conducted a survey of USDA research-grade scientists to measure confidence in the Department's culture of scientific integrity.

OBJECTIVE

We assessed whether those conducting scientific research in USDA perceive they have, within reason, an unhindered ability to perform and communicate all aspects of their research assignments or projects, and whether the SIP has sufficient controls to ensure research results are published and communicated accurately and objectively.

REVIEWED

We issued a survey questionnaire to 2,212 research-grade scientists at the Agricultural Research Service, Forest Service, Economic Research Service, and Natural Resources Conservation Service. We reviewed policies and training modules for the SIP and interviewed officials in Washington, D.C.; Lincoln, Nebraska; and Beltsville, Maryland.

RECOMMENDS

The Office of the Chief Scientist (OCS) should strengthen communication with Department agencies about scientific integrity and work with the agencies to identify non-confrontational approaches to understand the perceptions identified in the survey. In addition, OCS should ensure appropriate personnel receive updated training materials and make them available in multiple formats.

WHAT OIG FOUND

The Department of Agriculture (USDA) sponsors scientific research for the benefit of the Nation's agriculture. To ensure that the public, policymakers, and stakeholders receive accurate and unbiased results, research agencies must maintain a culture of scientific integrity. We conducted a survey to assess employees' perceptions and the Department's efforts to support that culture. Based on the timing of this audit, we designed our fieldwork and the accompanying survey to focus on the 2013 Scientific Integrity Policy (SIP).

About 83 percent of survey respondents said they feel that their agencies "strongly" or "somewhat" promote a culture of scientific integrity. However, we found there were survey respondents who indicated a perception that their research findings had been altered or suppressed for reasons other than technical merit. Even a perception of such activity could have a negative effect on the credibility of Department-sponsored research.

Our survey also showed that the Department's primary tool for promoting and ensuring scientific integrity had limited perceived impact on USDA scientists and their work. Additionally, ambiguities in the 2013 SIP could have misinformed scientists on key aspects of the policy. Although the SIP and other resources have recently been improved, this knowledge gap could cause researchers to misinterpret responsibilities, which places them at risk to either intentionally or unintentionally commit a scientific integrity violation in their research.

The Department agreed with our findings and recommendations, and we accepted management decision on all five recommendations.

United States Department of Agriculture
Office of Inspector General
Washington, D.C. 20250

DATE: February 28, 2018

AUDIT NUMBER: 50601-0006-31

TO: Dionne Toombs, Ph.D.
Director
Office of the Chief Scientist, USDA

ATTN: William Trenkle, Ph.D.
Departmental Scientific Integrity Officer, USDA
Office of the Chief Scientist, USDA

FROM: Gil H. Harden
Assistant Inspector General for Audit

SUBJECT: Reviewing the Integrity of USDA's Scientific Research Program

This report presents the results of the subject review. Your written response to the official draft report, dated February 8, 2018, is included in its entirety at the end of this report. Your response and the Office of Inspector General's (OIG) position are incorporated into the relevant sections of the report. Based on your written response, we are accepting management decision for all audit recommendations in the report, and no further response to this office is necessary.

Please note that Departmental Regulation 1720 requires final action to be taken within 1 year of each management decision to prevent being listed in the Department's annual Agency Financial Report. For agencies other than Office of the Chief Financial Officer (OCFO), please follow your internal agency procedures in forwarding final action correspondence to OCFO.

We appreciate the courtesies and cooperation extended to us by members of your staff during our audit fieldwork and subsequent discussions. This report contains publicly available information and will be posted in its entirety to our website (http://www.usda.gov/oig) in the near future.

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Background and Objectives

Background

The Department of Agriculture (USDA) employs thousands of people across many agencies who design and conduct scientific research for the Department. These scientists' contributions benefit not only the agriculture sector, but the Nation as a whole. For fiscal year 2016, USDA reported that its agencies had 244 new inventions, 60 patent awards, and 109 new patent applications.[1] The public, policymakers, and other scientific entities that use USDA-sponsored research depend on the Department's reputation for scientific integrity to ensure objective and reliable results. However, the Department's credibility and the efforts of its scientists can be undermined when the integrity of its science is questioned.

Specifically, USDA defines the concept of scientific integrity as:

> The condition resulting from adherence to professional values and practices when conducting, reporting, and applying the results of scientific activities that ensures objectivity, clarity, and reproducibility, and that provides insulation from bias, fabrication, falsification, plagiarism, inappropriate influence, political interference, censorship, and inadequate procedural and information security.[2]

Because science and technology often play a pivotal role in achieving national goals and formulating policy, it is imperative that the integrity of science within any branch of the government be preserved. As such, the President signed the Presidential Memorandum on Scientific Integrity, dated March 9, 2009. The memorandum contained precepts such as public trust, freedom from political interference, availability of governmental science to the public, and transparency of use in policymaking.

Consistent with the Presidential Memorandum, the Secretary of Agriculture signed USDA's own Scientific Integrity Policy (SIP) on August 5, 2011, which was later updated in 2013.[3] The SIP echoed the Presidential Memorandum by providing guidance to ensure the Departmental leadership and its employees use the highest level of integrity. Based on the timing of this audit, we designed our fieldwork and the accompanying survey to focus on the 2013 SIP.

The Office of the Chief Scientist (OCS) was established as a result of the Food, Conservation, and Energy Act of 2008, with a mission to provide strategic coordination of the science that

[1] USDA FY 2016 Annual Report on Technology Transfer issued July 20, 2017.
[2] Departmental Regulation 1074-001, Scientific Integrity, November 18, 2016.
[3] During the course of this audit, the Departmental Regulation on Scientific Integrity was updated again in November 2016. When discussing the survey questions (see Appendix A), we are referring to the 2013 version when the acronym SIP is used.

informs the Department's and the Federal Government's decisions, policies, and regulations.[4] OCS is directed by the Chief Scientist, who is also the Under Secretary for USDA's Research, Education, and Economics (REE) Mission Area. Additionally, the Chief Scientist is responsible for overseeing all aspects of the Department's SIP. OCS has a Departmental Scientific Integrity Officer (DSIO), who works in concert with Agency Scientific Integrity Officers (ASIO) within various USDA research agencies. Most of these officers oversee scientific integrity as well as issues regarding research misconduct.[5] While sometimes similar, scientific integrity and research misconduct are two different issues that OCS and agency officials must oversee within USDA.[6]

The Departmental Regulation on Scientific Integrity, updated on November 18, 2016, encompasses all aspects of scientific integrity, including research misconduct. Scientific integrity helps ensure that scientists can conduct and report on their research work without influence or interference, whereas intentional misconduct in the research process addresses a subset of scientific integrity specifically dealing with situations when a scientist might infringe on the purity of developing the scientific data he or she wishes to report.

In 2014, a researcher alleged a manager retaliated against him for publishing his research on a sensitive topic. The researcher made this claim through the scientific integrity complaint process. Because the allegation was later included as part of litigation, it received media attention in 2015 and 2016. USDA's Office of Inspector General (OIG) received eight integrity complaints from May 2015 through April 2016 concerning research. The eight complaints referenced reports of researchers being restricted, which was similar to the original complaint or referenced media articles related to it. We initiated this audit to determine whether USDA researchers' perception of scientific integrity differ from these allegations or complaints. We did not perform follow-up work to examine these specific complaints because all but one complaint were general in nature, and the one discussed the 2014 allegation, which was under litigation. Additionally, our objective was to determine the perception of USDA scientists' ability to conduct unhindered research.[7]

Although scientific research takes place across the Department, we decided to focus our review on four agencies: the Agricultural Research Service (ARS),[8] Forest Service (FS),[9] Economic

[4] Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, 122 Stat. 1651 established the OCS.
[5] USDA addressed research misconduct in a June 2008 Departmental Regulation. Departmental Regulation 2401-001, USDA Intramural Research Misconduct Policies and Guidelines, June 2008. Some agencies have an Agency Research Integrity Officer who oversees research misconduct issues.
[6] Research misconduct is defined as the "fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results."
[7] USDA researchers should first attempt to resolve research integrity issues through the SIP complaint process.
[8] ARS researches a wide range of solutions to agricultural problems that affect Americans every day from field to table.
[9] FS research focuses on topics affecting the health, productivity and sustainability of our national forests such as the impacts of climate change, invasive species, and fire among other topics.

Research Service (ERS),[10] and Natural Resources Conservation Service (NRCS).[11] These agencies use "research-grade scientists,"[12] who are required to publish and communicate their research as part of their "grading criteria" under the Research Grade Evaluation Guide (RGEG).[13] These 4 agencies have just over 2,200 research-grade scientists—ARS has about 1,600, FS about 500, ERS just over 125, and NRCS has 4.

Objectives

We had two objectives for this audit. First, we assessed whether those individuals conducting scientific research in USDA perceive they have, within reason, an unhindered ability to perform and communicate all aspects of their research assignments or projects. Second, we assessed whether the USDA SIP has sufficient controls to ensure that scientific research results are published and communicated based on actual research performed and supported conclusions without undue interference.

[10] ERS research is focused on the economic effects related to agriculture, food, the environment, and rural development.
[11] NRCS' research authority is limited to soil survey and soil survey applications.
[12] USDA has other agencies that use scientists, such as the Food Safety Inspection Service; however, the scientists in these agencies mostly do scientific analysis or are considered "regulatory" in their scientific endeavors. OCS did not consider this type of scientist to meet the criteria of a research-grade position.
[13] RGEG was published in September 2006 by the Office of Personnel Management (OPM).

Section 1: Report on the Analysis of the Survey Results

Finding 1: Most USDA Scientists Believe Scientific Integrity is Adequately Supported, but Some Areas of Concern Exist

The results of our survey of USDA research-grade scientists indicated that about 83 percent of survey respondents said their agencies "strongly promote" or "somewhat promote" a culture of scientific integrity.[14] However, a small percentage of respondents (less than 10 percent) indicated a perception that findings were altered or suppressed for reasons other than technical merit.[15] Even a perception of such hindrances could have a negative effect on the credibility of Department-sponsored research. The Department could experience undue criticism from the media, and stakeholders such as the public, policymakers, and the scientific community could have diminished confidence in USDA's research products.

The Department and its research entities rely on the SIP for guidance towards promoting a culture of scientific integrity. The policy states, "Science and public trust in science, thrives in an environment that shields scientific data and analyses and their use in policymaking from political interference or inappropriate influence." Scientific findings and products should not be suppressed or altered.[16] To ensure the highest level of integrity in all aspects of the Department's and USDA agencies' research endeavors, the Departmental Regulation not only established the SIP, but provided instructions and guidance to the Departmental leadership and the employees on this matter.

Using a questionnaire, delivered via an online survey, we gathered responses that were used to assess whether scientists conducting research within USDA perceived they have, within reason, an unhindered ability to perform and communicate all aspects of their research assignments or projects. To assist in attempts to gather a robust response rate, the Chief Scientist sent notification to the universe population encouraging them to participate in the OIG-developed survey.

The survey had 1,342 applicable respondents,[17] which was about 61 percent of the total universe (those who received an invitation to take part in the survey); about 98 percent of those

[14] To conduct our review, we used a survey questionnaire that allowed an anonymous response, distributed to the 2,212 research grade scientists across the 4 agencies. OIG received a total of 1,349 survey respondents for a response rate of about 61 percent. In addition, the survey was designed so that the respondents only answered questions that were applicable to the researcher's current position and prior experience. For example, a "Yes" answer might prompt the respondent to answer additional questions, whereas a "No" answer might direct a respondent to the next section of questions. We designed the survey to keep respondents from answering non-applicable questions. Because we designed the survey in this manner, some sections of the survey will have fewer responses than others.

[15] See Appendix A question 17 for the responses to "Strongly promotes it" and "Somewhat promotes it" for the 83 percent, and question 36 for the responses to "Disagree" and "Strongly Disagree" for the "less than 10 percent."

[16] USDA Departmental Regulation 1074-001, Scientific Integrity, Section 5(a), (May 10, 2013).

[17] Although 1,349 participants responded, 7 of the respondents answered that they were not research-grade scientists, which prompted these individuals to exit the survey. Therefore, OIG received responses to the

respondents completed the entire survey. We concluded the respondents were a good representation of the universe as they: (1) had extensive research experience, and (2) had personal experience with matters of scientific integrity. Specifically, about 89 percent of those who specified their grade level indicated being GS-13 or above,[18] and around 65 percent of the respondents indicated that they were in a supervisory position.[19] Almost 69 percent of the participants have worked at USDA as a research-grade scientist for 11 years or more.[20]

Many Scientists Perceived Positive Support for Scientific Integrity from Agency and Department Officials

We found that about 83 percent[21] of respondents believed their agency "Strongly" or "Somewhat" promoted a culture of scientific integrity. From those who expressed a strong belief in a culture of integrity, several optional comments expressed that, since science has to rely on integrity, the work environment naturally follows that principle.[22] For example, one respondent (who reported having over 20 years of experience at USDA as a research scientist) indicated a perception that a culture of scientific integrity had always been promoted in that workplace.

We asked respondents the extent to which they agreed that their work was not altered for reasons other than technical merit, and over 80 percent "Agree" or "Strongly" agreed that their work had not been altered.[23] Optional comments indicated a belief that an inherent culture of integrity exists.[24] Others indicated a perception that "extra steps" are most likely to occur around the publication of controversial research, but one respondent expressed confidence that open communication with managers leads to reasonable resolutions. Additionally, in another survey question, we asked the respondents if they had been asked to retract or omit data or results since the issuance of the 2013 SIP. Over 98 percent of the respondents answered "No."[25]

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questionnaire from 1,342 respondents. There was also one individual that responded "Yes" to the first question but did not respond to any subsequent questions.

[18] This question was optional, and 1,279 respondents specified their grade level. Of these, 1,135 indicated that they were GS-13 or above, including the following two of six who chose "Other (please specify)." One of the "Others" indicated "GS-13," and another specified "SSTS" (see Question 55 in Appendix A of this report).

[19] For this question, 1,341 respondents answered (see Question 5 in Appendix A of this report), with 866 answering they were in a supervisory position.

[20] Almost 69 percent refers to the 909 of 1,326 who responded to Question 22, then indicated 11 years or more experience in Question 23 (per Q22 and Q23 tables in Appendix A).

[21] For this question, 1,332 respondents answered (see Question 17 in Appendix A of this report), with 1,099 answering positively.

[22] For certain questions throughout the survey, respondents were given the option to provide written comments.

[23] For this question, 1,318 respondents answered (see Question 36 in Appendix A of this report), with 1,067 answering positively.

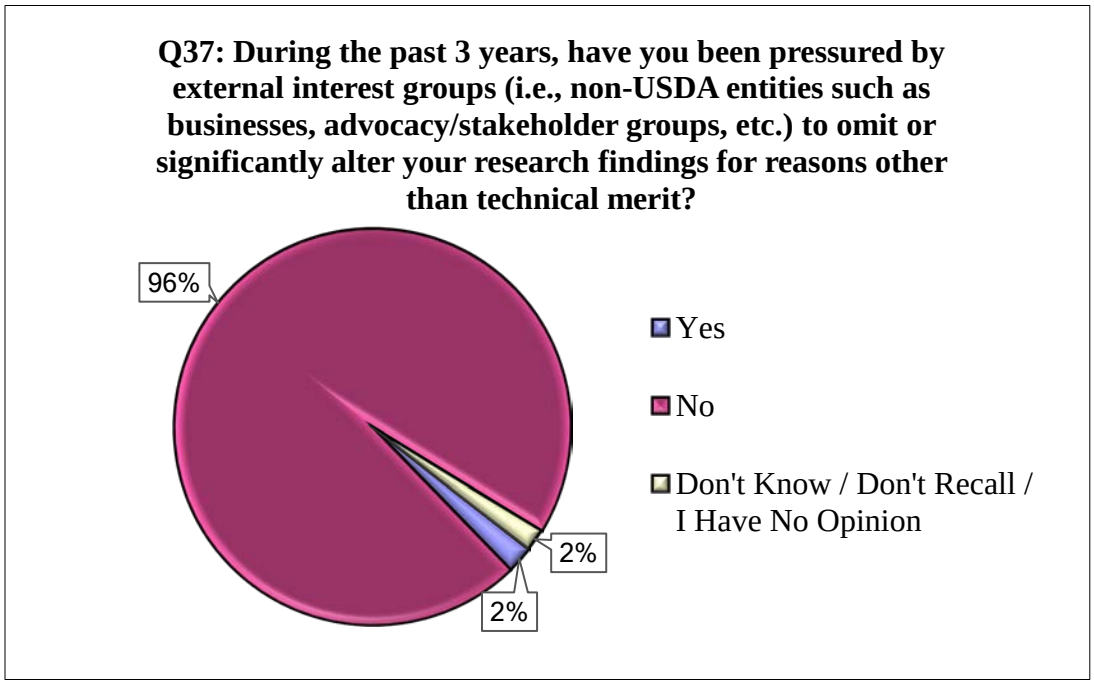
[24] In the optional comment section of Question 36, we received 93 comments: 21 from those who "Strongly Agreed," 28 from those who "Agreed," 14 from those who answered "I Have No Opinion," 20 from those who "Disagreed," and 10 from those who "Strongly Disagreed."

[25] See Question 48 in Appendix A of this report. This question had 1,313 respondents with 1,293 answering "No," and 20 answering "Yes."

Some Respondents Expressed Concern about Pressure to Change Results

Although our survey showed positive results concerning the culture of scientific integrity within USDA, we found areas in which communication could be strengthened to reduce perceptions that research results are omitted or altered for reasons other than technical merit. We asked a series of questions about pressure to change scientific results or information provided to the public.[26] For these questions, some respondents answered that they had at least one experience in this area. For example, just over 2 percent of scientists responded they had been pressured by external interest groups (non-USDA entities such as businesses or advocacy/stakeholder groups) to omit or significantly alter their research findings since the SIP was revised in 2013.

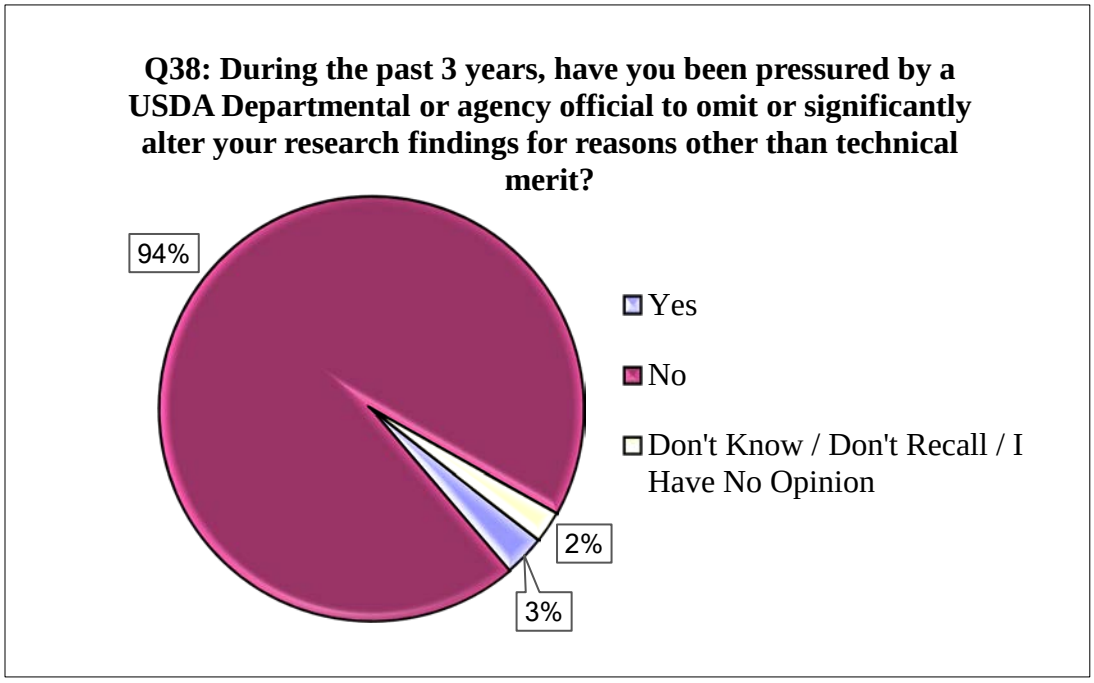
Figure 1. Responses to Question 37 of the Scientific Integrity Survey.



Whereas, as seen in the next graph, about 3 percent of respondents indicated they had been pressured by a Department or agency official to omit or significantly alter their research findings for reasons other than technical merit during the past 3 years.

[26] We determined that 68 of 1,315 (see Questions 37 – 39 in Appendix A of this report) individuals gave affirmative answers for these 3 questions, which totaled 82 affirmative answers. This meant that some individuals gave affirmative answers to more than one question.

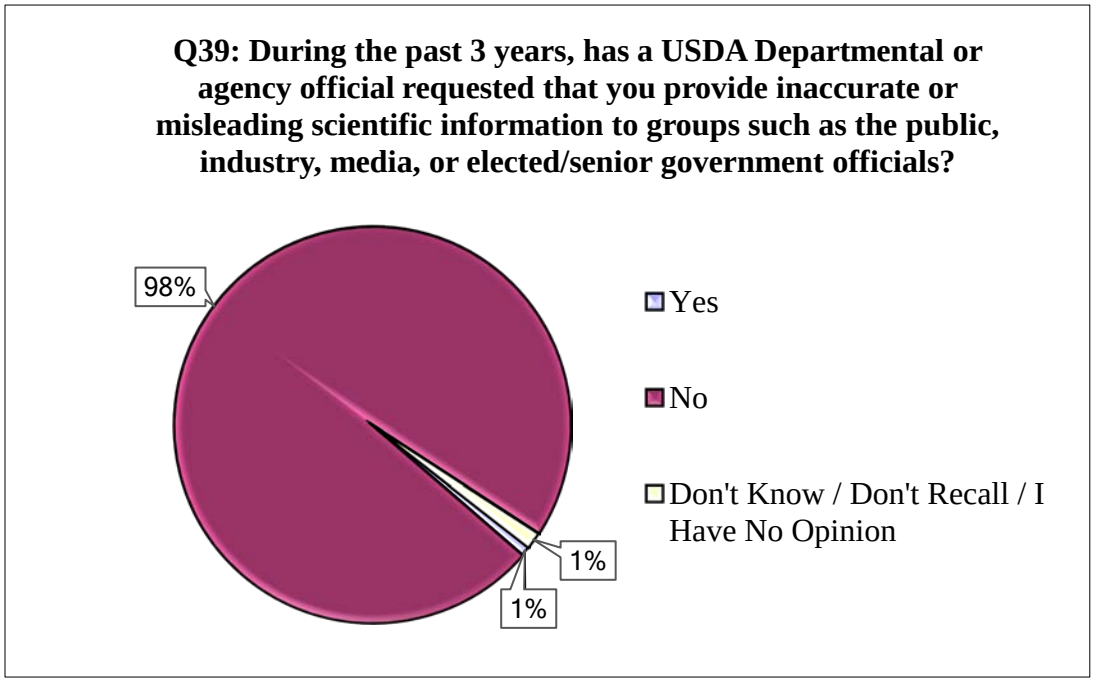
Figure 2.[27] Responses to Question 38 of the Scientific Integrity Survey.



[27] Not all figures in this report will add up to 100 percent due to rounding.

Finally, just under 1 percent indicated that they had been asked to provide inaccurate or misleading scientific information to groups such as the public, industry, media, or elected/senior government officials.

Figure 3. Responses to Question 39 of the Scientific Integrity Survey.



Since survey respondents were anonymous, we were not able to discuss or validate individual responses or comments the researchers provided to survey questions. The survey included a direct telephone line for researchers to use if they wanted to discuss their situation with OIG; however, no one contacted us.

Through our discussions with agency and OCS officials, we identified two possible situations that might cause employees to question released results. First, these officials explained that sensitive research topics tend to receive closer scrutiny through the publication process, but as long as the science is determined to be sound, the research will be published. Second, they also said researchers must be careful to distinguish between what the research data shows (objective interpretation of results), and personal opinion on the results (subjective interpretation). When situations such as these arise, the SIP is intended to allow researchers an avenue to question these situations.

Recent media attention focused on a researcher who alleged he faced discipline to suppress his science, and other scientists who alleged they "faced discipline in retaliation for their work." Therefore, we asked respondents if they perceived retaliation by

management or others because of their research results.[28] Over 96 percent answered "No" to the question. However, 10 of these respondents provided optional remarks that either stated they knew of colleagues who were the subject of retaliation, they had been the subject of retaliation for personal conflicts with managers, or provided other negative remarks. Respondents who had answered "Yes" about retaliation made optional comments about authorship issues, the belief that their results contradicted other results, funding issues, and other details.[29]

Our survey determined that respondents did not identify any noticeable impact on their work due to the presence of the SIP. Officials from the Department and the agencies reiterated an idea that respondents stated in the survey: for science to be considered sound, activities must be conducted with integrity.[30] Therefore, because of the inherent presence of integrity in the Department's scientific research, it is possible that many employees consider the SIP redundant.

In accordance with the SIP and discussion with Departmental and agency officials, we agree that a culture of scientific integrity needs to be promoted within all USDA agencies, regardless of the results of the OIG survey. Therefore, we recommend that each agency consider approaches in following up with their researchers about any potential inappropriate influences on scientific endeavors such as those identified in OIG's survey. When we discussed this with officials from each agency, some expressed that they might need to rethink methods of obtaining the personal sentiment of researchers and how to relate "lessons learned" to other USDA research agencies. Some agencies volunteered ideas such as "listening sessions" or "town halls" as a desirable method to use. As the agencies move forward with reaching out to their scientific personnel for feedback, we also recommend they should communicate issues, hindrances, and best practices with OCS so that other agencies could benefit from helping improve the perception of scientists. Lastly, we recommended that OCS determine which method or methods can be shared with the agencies that will best communicate the importance of outreach for a stronger emphasis on scientific integrity by supervisors and the promotion of a culture of integrity within each agency. In discussion with OCS and agency officials, we generally received concurrence with our recommendations.

Although the results of our survey indicated a relatively small number of respondents with concerns about pressure, we believe that media coverage regarding the perception of even one

[28] See Question 47 in Appendix A. This question had 1,313 respond, with 1,264 answering "No" and 49 answering "Yes."

[29] There were 37 optional comments from those who answered "Yes" to Question 47, and we tried to categorize the comment's apparent topics or issues for the basis of claimed retaliation. We made the following categorizations: We considered "authorship issues" to be those that the respondent indicated that others, such as a supervisor, tried to receive credit for the reporting of results when they were not considered to be earned. We considered "the belief that their results contradicted others" as when the respondent indicated that their reported findings do not match results from other sources such as an outside entity or a colleague. We categorized some responses as "funding issues" from responses who described funding cuts such as cancelled travel or cuts to research because it did not align with the agency mission. Lastly, we chose the term "Other Details" to refer to a variety of seemingly unrelated issues.

[30] This concept was also identified in the 2013 SIP: "This policy…will help ensure that services to USDA clients are backed by sound science and that the actions of employees and contractors are conducted with integrity."

USDA scientist could have a negative impact on all USDA research, causing stakeholders to have less confidence in research results from the Department. Such diminished confidence, if it occurs, could also mean that the resources and taxpayers' investment into these projects could be impacted negatively because of the perception of a diminished return on the investment. OCS and the research agencies should take steps to safeguard the Department's culture of scientific integrity and credibility as a reliable source for information.

Recommendation 1

The Office of the Chief Scientist (OCS) should coordinate with each agency to determine the best method to identify why some scientists perceive that there are inappropriate influences that might hinder them from performing all elements of their research.

Agency Response

In its February 8, 2018, response, OCS stated:

> OCS will continue to increase outreach to the four (4) agencies with "research-grade" staff to ensure that the revised SIP is well publicized with this group of USDA employees and their supervisors through meetings with staff and presentations by the Departmental Scientific Integrity Officer (DSIO) and the Director and Deputy Director of OCS as appropriate. Education and communication, about what is (and what is not) inappropriate influence on research products as well as the opportunities/mechanisms for reporting any loss (perceived or actual) of scientific integrity, will be a primary focus of the outreach. The new AgLearn module, supporting the 2016 SIP, explicitly uses the example of a research-grade scientist being asked to remove a policy statement or judgement from a manuscript as NOT being inappropriate influence, which some scientists may have perceived to be inappropriate influence in the past. The DSIO will convene periodic meetings with Agency Scientific Integrity Officers (ASIOs) to discuss current topics and areas of concern. Additionally, the DSIO will meet with ASIOs from the four agencies to discuss ways to identify the root causes for perception of inappropriate influence on the research-grade scientists.
>
> Estimated Completion Date: The initial meetings between the DSIO and ASIO will be completed by September 30, 2018. Outreach presentations to the agencies has already started and is on-going.

OIG Position

We accept management decision for this recommendation.

Recommendation 2

Based on the responses to Recommendation 1, OCS should coordinate with each agency to share with other agencies any recognized potential issues or hindrances dealing with scientific integrity, identify any common or systemic problems, and work to develop resolutions that can be implemented across all agencies.

Agency Response

In its February 8, 2018, response, OCS stated:

> Many of the OCS responses to Recommendation 1 are responsive to this recommendation. If a systemic issue is identified, OCS, and the Chief Scientist, will document the perceived issue impacting scientific integrity and determine the appropriate response(s) in coordination with the agencies. The response determination may involve discussions and strategic planning with ASIOs/ARIOs, and/or the Ethics office, to clarify the issues and identify agency-specific and department-wide actions/needs. Appropriate responses include, but are not limited to, additional outreach and/or education and/or written guidance on the specific issue to agencies/staff. The periodic meetings between the DSIO and ASIOs will be the primary forums for identifying potential challenges and dissemination of solutions.
>
> Estimated Completion Date: Identification of potential common problems and proposal of solutions will be completed by December 31, 2018.

OIG Position

We accept management decision for this recommendation.

Recommendation 3

OCS should coordinate with each agency to determine a methodology of outreach that best communicates the importance of supervisors and agencies emphasizing and promoting a culture of scientific integrity.

Agency Response

In its February 8, 2018, response, OCS stated:

> Outreach to supervisors is an important topic that OCS recognized while preparing the revised 2016 SIP. Section 7(g) of the 2016 SIP provides guidance to managers and supervisors as to their duty to be aware of the principles of scientific integrity in the DR, to implement and comply with the DR and DM 1074-001, to abide by the USDA Code of

Scientific Ethics, reporting requirements, and need to ensure that their employees are informed about, and receive training on, the revised 2016 SIP (DR 1074-001). Part of the outreach presentations by the DSIO (See Agency Response to recommendation 1 and 2)includes explicit reference to this guidance and this guidance will continue to be shared with agencies and staff at outreach presentations.

As OCS identifies challenges (See Agency Response to Recommendation 2) within USDA agencies that may impact the perception of scientific integrity, outreach can be restructured, as appropriate, to include case studies, positive examples and/or discussion points to enable agencies to minimize potential impact/hinderances [*sic*] on integrity processes. The DSIO will meet with the four agency ASIOs to identify the best agency-specific method for reaching the relevant supervisors of research scientists.

Estimated Completion Date: December 31, 2018.

OIG Position

We accept management decision for this recommendation.

Section 2: Policy Controls

Finding 2: OCS Needs to Ensure that USDA Scientists are Aware of and Understand the SIP

Through various key survey questions, the results of OIG's survey of USDA scientists showed that approximately 18 percent[31] of the respondents were unaware of the SIP, almost 33 percent[32] did not explicitly recall whether or how they took SIP training, and about 85 percent[33] did not comprehend or expressed no opinion on the benefits of the SIP.[34] This happened because OCS and the research agencies did not successfully make their scientists aware of training resources or clearly explain the details of the SIP. Additionally, the 2013 SIP and the related Departmental online training module contained ambiguities that could lead to misinformation on key aspects of the SIP. Although OCS updated and reissued the SIP in November 2016 and updated the online training module, if the lack of awareness we identified from our survey regarding the 2013 SIP was to continue, it could cause some researchers to be ignorant of responsibilities and benefits associated with the improved 2016 SIP. For example, without the updated guidance, researchers could confuse the public by presenting personal opinion as the official government position regarding certain research topics,[35] and in turn affect the credibility of USDA's research results and scientific endeavors.

The DSIO from OCS is responsible for developing training and conducting outreach activities to facilitate employee awareness and understanding of the policies of the Departmental Regulation.[36]

When we began our review in April 2016, OCS had started a critical review of the 2013 SIP. This review was due to weaknesses OCS had identified in the document in 2015, which indicated the 2013 SIP was vague in areas or lacking information in others. For example, OCS identified that directions for how agencies were to respond to an alleged scientific integrity violation were vague, and the document did not address how a scientist should communicate in a personal capacity compared to communicating on behalf of the agency. Based on our review of the 2013 SIP, we concurred with OCS' conclusions. In November 2016, OCS published the updated version of the SIP, which was improved and clarified.

Further, beginning in 2013, OCS developed and posted training materials about the 2013 version of the SIP on AgLearn (the Department's online training portal). We reviewed the training and found that the SIP training did not address key responsibilities for OCS, DSIO, and ASIOs' scientist protections and the scientific integrity complaint process. When OCS updated the SIP

[31] The data for the 18 percent was from 1,337 respondents answering Question 11.
[32] The data for the 33 percent was from 1,104 respondents answering Question 13.
[33] The data for the 85 percent was from 1,113 respondents answering Question 29.
[34] Because we took the three percentages (18, 33, and 85 percent) from different questions, the total will not equal 100 percent.
[35] The revised 2016 SIP states that speaking in a personal capacity is allowed, as long as the scientist makes it clear to the audience when he or she is speaking in his or her official capacity versus personal capacity.
[36] USDA Departmental Regulation 1074-001, Scientific Integrity, Section 7(b) (2) (November 18, 2016).

in November 2016, it also updated the SIP training in AgLearn. Based on our review of the updated training, OCS addressed the issues we noted in the 2013 training in the new 2016 training material. OCS officials also explained that, in addition to the AgLearn training, they held classroom-style courses and sent out Portable Document Format (PDF) versions[37] of the AgLearn training course in an effort to reach as many scientists as possible.

We reviewed OCS' determinations made in response to allegations of compromised scientific integrity to ensure OCS and the agencies followed procedures and reviewed each allegation consistently. We requested the documentation on all complaints occurring after the 2013 SIP, which amounted to 15 complaints. Of the three complaints related to scientific integrity issues, one was resolved at the agency level, and the remaining two were elevated to OCS for resolution. The other 12 were related to research misconduct and not scientific integrity issues. Our review of records for the two cases elevated to OCS showed that the agencies and OCS followed procedures properly. Additionally, OCS took steps to improve the handling of complaints from scientists by providing guidance to the agencies for processing complaints, which included a checklist and standard complaint form.

Even with adequate controls in place, scientists need to be aware they exist. Although our survey suggested that USDA scientists value scientific integrity and believe it is a vital part of successful, unbiased research, we noted that about 18 percent of respondents said they were not aware of the SIP.[38] We also noted 7 percent of the respondents who could explicitly recall their SIP training indicated the training was not adequate or sufficient.[39] Lastly, approximately 41 percent of the respondents answered that they either did not take the training or could not explicitly remember whether or how they took the training.[40][41]

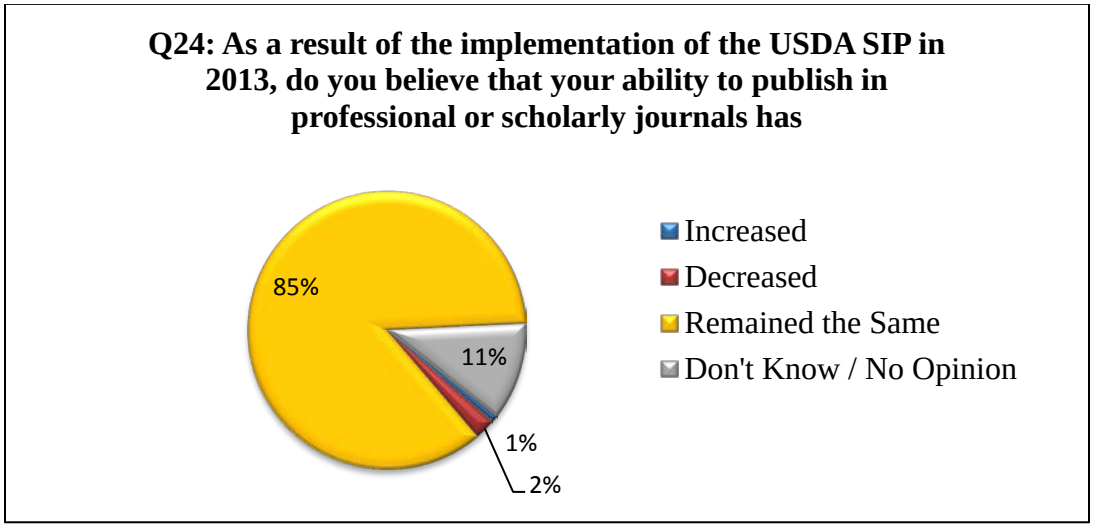
We reviewed AgLearn records[42] for the 2,212 scientists in the survey universe and found that 294 (13 percent) were not recorded as having completed the 2013 SIP AgLearn training, which could account for some of the scientists' lack of awareness in the survey results. For example, we noted that approximately 60 percent of the survey respondents indicated they were unaware of an established procedure to file a scientific integrity complaint. Although this information was largely missing from the 2013 AgLearn training, OCS added details to the 2016 SIP and training for filing complaints about potential scientific integrity violations. Therefore, OCS

[37] "PDF" is defined as a type of file format that provides an electronic image of text or text and graphics that looks like a printed document and can be viewed, printed, and electronically transmitted.
[38] See Appendix A, Question 11, for the question and its results. In this question, we referred to both the SIP and the USDA's Departmental Regulation 1074-001.
[39] See Appendix A, Question 14, for the question and its results. We removed 349 respondents that answered "Not Sure/Don't Remember" to Question 13 about whether they took the SIP training.
[40] See Appendix A, Question 13, for the question and its results. Specifically, 453 of 1,104 respondents either answered, "I have not received any training" or "Not Sure/Don't Remember" and seven of these chose both answers.
[41] We acknowledge that there is a potential that newly hired scientists who participated in the survey may not have been administered the SIP training. Question 22 shows that almost 16 percent of the respondents were hired after the implementation of 2013 SIP; therefore, these individuals had 3 years or less experience at the time of the survey.
[42] We obtained SIP AgLearn records covering the years 2013 through 2016 to cover the timeframe when the revised 2013 SIP and associated training were available.

should take the appropriate steps to ensure the affected scientists and researchers are aware of these improvements.

A majority of the survey respondents indicated the presence of the SIP had a neutral effect on several aspects of their research efforts. We developed five questions for the survey specific to interaction with the scientific community at large and scientific integrity when communicating with the media.[43] These questions were intended for scientists who had been working for USDA prior to the issuance of the 2013 SIP so they could provide a comparative perception on its impact. The questions asked respondents to choose from four possible answers to measure how the SIP affected their participation in the scientific community or the communication of their research (these choices were "Increased," "Decreased," "Remained the Same," and "Don't Know/No Opinion"). Across these 5 questions, 85 to 98 percent of the respondents answered that since the implementation of the SIP, their participation in the scientific community or the communication of their research either "Remained the Same" or "Don't Know/No Opinion."

Figure 4. Responses to Question 24 of the Scientific Integrity Survey.



[43] See Appendix A, Questions 24-28 for the actual questions and their results.

Figure 5. Responses to Question 25 of the Scientific Integrity Survey.

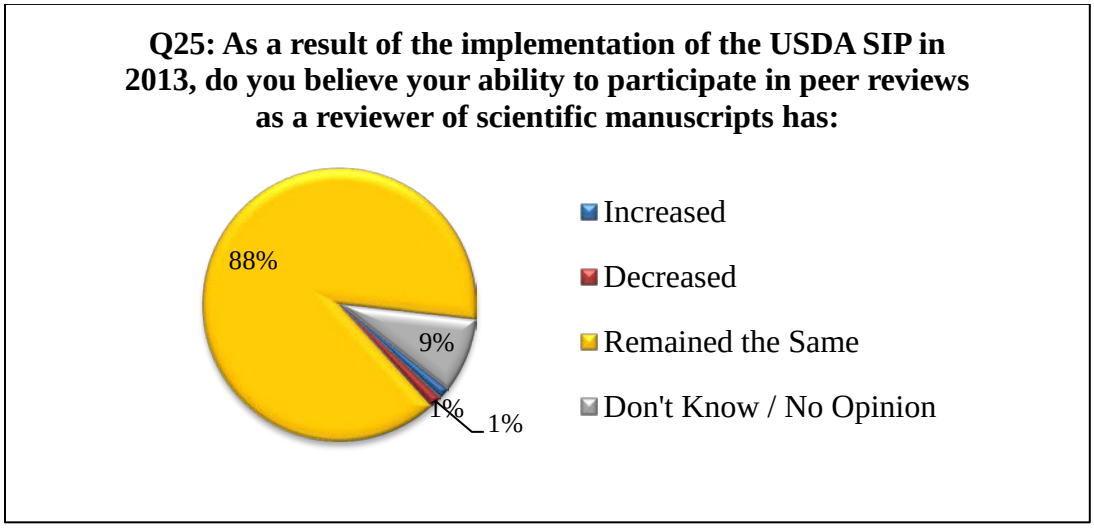


Figure 6. Responses to Question 26 of the Scientific Integrity Survey.

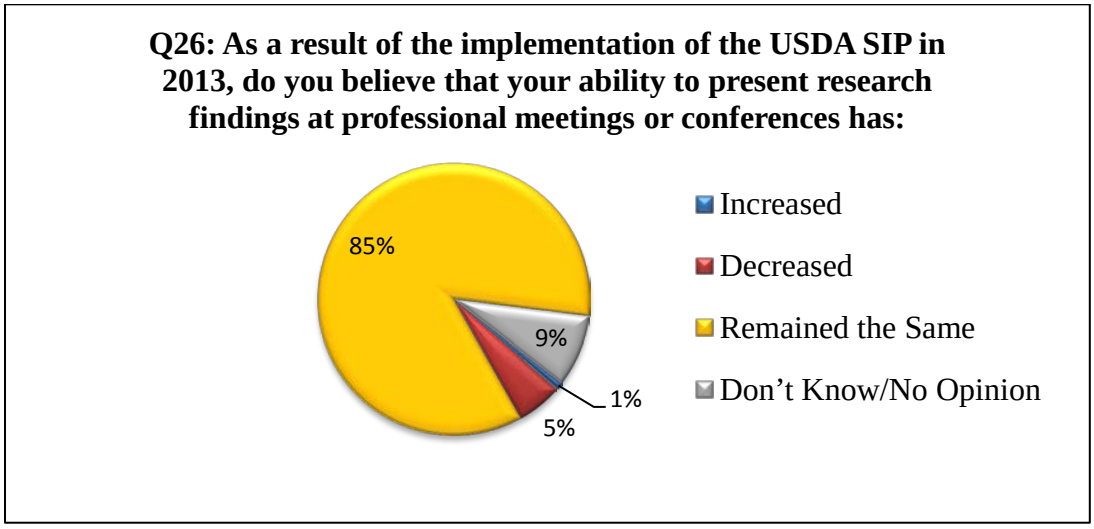


Figure 7. Responses to Question 27 of the Scientific Integrity Survey.

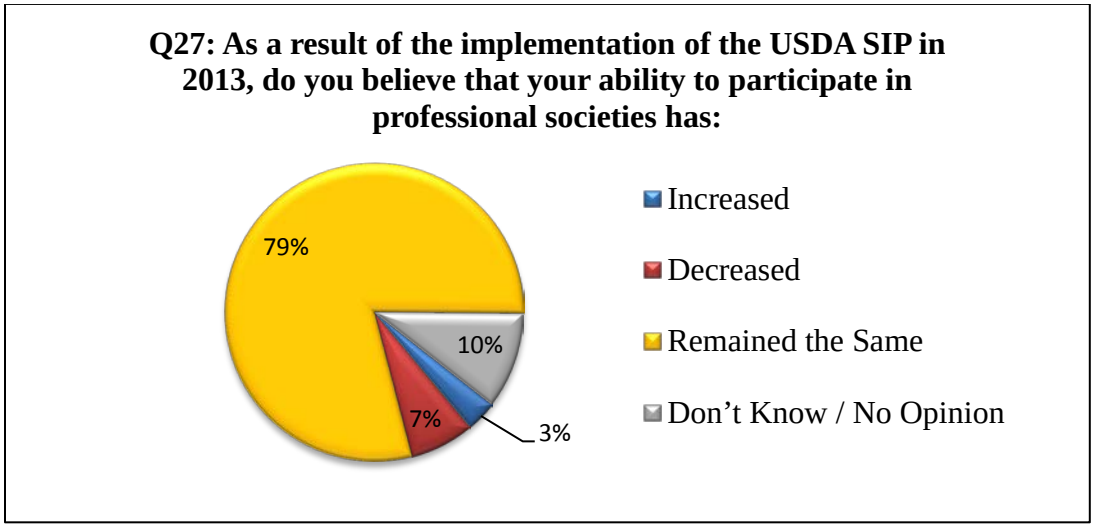
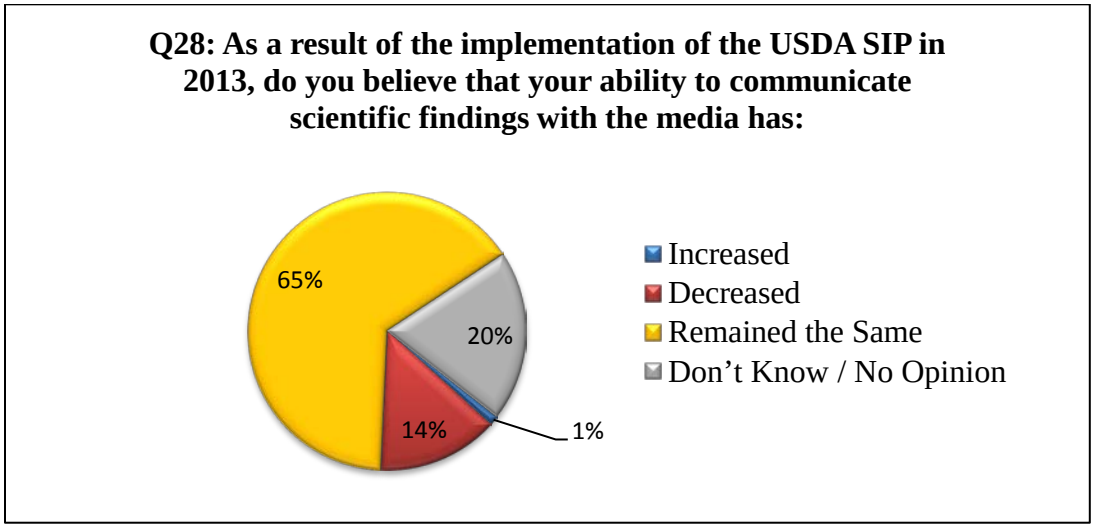


Figure 8. Responses to Question 28 of the Scientific Integrity Survey.



We discussed the results of the responses to the above-mentioned survey questions, the scientists' lack of awareness of the SIP, and the impact of training with the OCS' DSIO and officials from each agency. All agreed the training could have affected what was portrayed in the survey results. Additionally, officials said that scientists need to have an inherent amount of integrity in conducting research,[44] and one official said they might not give policies such as the SIP much credence, which could be reflected in the survey's results that indicate lower

[44] Scientific research that lacks integrity could provide misleading results, which could impact the reputation of the researcher and the Department.

awareness of the SIP. One official further explained that a basic characteristic of scientific research is integrity, and poor adherence to this characteristic will not have good outcomes in the long term for scientists. For example, the official said that if scientists do not adhere to integrity in their research, their credibility will be undermined, which in turn reduces opportunities for future research. In order for scientific research to occur, it needs some type of funding, and a scientist whose research has diminished credibility will have less chance of obtaining the necessary funding to perform the research.

Although scientists indicated they conduct their research with integrity, it is important that all aspects of the 2016 SIP be emphasized. The 2016 SIP's additional discussion on scientists' allowed interactions with the media directly relates to scientists' response to survey question 28. Our survey asked whether the SIP had an effect on USDA scientists' ability to communicate findings with the media (all survey questions about the SIP refer to the 2013 version). We noted that respondents expressed more perceived negative impact regarding their ability to communicate with the media versus publishing in professional or scholarly journals, participating in peer reviews, presenting research at professional meetings, and participating in professional societies. Question 28, which dealt with communication with the media, received twice as many "Decreased" responses as Questions 24 through 27. ASIOs agreed that the 2013 SIP limited scientists' ability to speak their opinions on research results, to imply that a change in government policy was needed. Agency officials said that sometimes the scientists are eager to speak about their research and can go beyond only speaking in their capacity as an agency scientist about their research results and begin speaking in a personal capacity by expressing their own opinions on results instead of the scientific data. In those cases, scientists were reminded by management to speak only about the data. The 2013 SIP did not describe an allowance for speaking in a "personal capacity." However, the 2016 SIP provided additional information on the difference between communicating with the media and the public in an "official capacity" compared to communicating in a "personal capacity," and made allowances to do so. Since this area of questioning received a higher negative response, we believe this is a key element of the 2016 SIP and OCS should take the appropriate steps to ensure that Departmental scientific personnel are aware of the nuances between these capacities.

In implementing the 2016 SIP, OCS has taken steps to help address the awareness issue our survey identified. OCS developed a new AgLearn training module to correspond with the updated SIP. The DSIO explained that the module has two options. The first option was characterized as a "full" version that provides a comprehensive overview of the updated SIP and its related benefits. The DSIO described the second option as a short or "light" version, intended to be a refresher for those who have already taken the "full" version. The official further explained that agencies could have their researchers take the "full" version initially and possibly take the "light" version as an annual refresher. He also suggested that agencies potentially could use the "light" version to help improve SIP awareness among non-research personnel, such as administrators or support personnel within USDA's scientific divisions.

Since some survey respondents seem not to recall the AgLearn training regarding the SIP, we discussed with the DSIO whether AgLearn alone was the best method to ensure that scientists fully understood the SIP. The DSIO agreed that perhaps other methods of outreach should be

considered to enhance the awareness of the SIP or reinforce scientists' knowledge of the SIP. Also, since not all scientists completed the 2013 SIP training, we suggest that OCS work with the agencies to ensure that those covered by the updated SIP receive the updated AgLearn training and refresher training as needed or on a regular basis. The DSIO and the agency officials agreed that our recommendations would help with the implementation of the updated SIP.

Since OCS has made the effort to improve the controls of the 2013 SIP and provide updated training as part of its implementation, it needs to ensure that researchers understand the benefits and nuances of the SIP. Although, as the DSIO and some agency officials explained, the concept of integrity is assumed within the research professions, the SIP is intended to help ensure delivery of transparent and actual results. Knowledge of the SIP could help scientists communicate responsibly with their peers, the media, and the public, thereby maintaining transparency and integrity. Therefore, OCS should take steps to ensure that all USDA scientists have access to and functional knowledge of the SIP.

Recommendation 4

OCS should evaluate methods of outreach to the Department's scientists to determine the most effective type of training, i.e. AgLearn, classroom, webinar, etc. for USDA scientists so that they can best enhance their understanding of key Scientific Integrity Policy (SIP) elements. OCS should coordinate with the agencies to make a determination on how best to implement these methods.

Agency Response

In its February 8, 2018, response, OCS stated:

> The OCS is committed to identifying and using the most effective pedagogical methods for adult learning. Some of the prior responses partially address this recommendation. The AgLearn modules have been revised to reflect the revised 2016 SIP and there is a shorter module for non-scientists, which has potential for refresher training usage. The OCS is evaluating the completion/penetration of the outreach of the AgLearn 2016 SIP modules and intends to document completion (in conjunction with agencies) by research-grade scientists and will review the classifications of employees that have/have not completed the AgLearn 2016 SIP modules. There are multiple intervention types that could be developed including, but not limited to, "Integrity minutes" (a short primer for staff to spur discussion of Integrity issues and success stories), posters/multimedia (that describe one facet of the SIP to invite discussion and raise awareness), and Classroom/Webinar/seminar presentations (both with and without peer learning initiatives). OCS and agencies will continue to evaluate and identify future training methods to reach departmental scientists.

Estimated Completion Date: Initial poll of completion of the 2016 SIP AgLearn module will be completed by July 31, 2018. Identification of new training methods will be completed by December 31, 2018.

OIG Position

We accept management decision for this recommendation.

Recommendation 5

OCS should coordinate with the agencies to ensure their scientists subject to the SIP complete the updated 2016 AgLearn training on the SIP and receive refresher training as necessary or on a regular basis.

Agency Response

In its February 8, 2018, response, OCS stated:

> The OCS plans to address the compliance of current USDA research-grade scientists, as discussed in the Agency Response to Recommendation 4. The appropriate time frame for refresher training (annually, bi-annually, etc.) and the mechanism for appropriate refresher training (AgLearn short module, "Integrity Minutes", webinar/discussion/peer learning of case studies or success stories) will be evaluated and discussed with the agencies at periodically scheduled meetings. OCS will synergize office outreach efforts surrounding the revised 2016 SIP with this refresher training to help reinforce the culture of integrity across USDA. The coordination will be achieved through periodic meetings of the DSIO and ASIOs.
>
> Estimated Completion Date: The completion of the AgLearn 2016 SIP module by all scientists will be documented and completed by Dec 31, 2018. Identification of the appropriate refresher training type and interval, and plans for implementation will be completed by February 28, 2019.

OIG Position

We accept management decision for this recommendation.

Scope and Methodology

We conducted our audit of the integrity of USDA's scientific research at the offices of ERS, FS, NRCS, and OCS in Washington, D.C. We visited ARS' National Office in Beltsville, Maryland, and held teleconferences with officials in the NRCS National Soil Survey Center in Lincoln, Nebraska. We performed fieldwork for this audit from April 2016 through July 2017. Our audit and survey focused on scientific integrity within the Department since the implementation of the 2013 SIP.

To accomplish our objectives, we performed the following audit procedures:

- Reviewed applicable laws, regulations, written policies, procedures, directives, handbooks, and other published guidance to gain sufficient knowledge for completing the audit;
- Reviewed scientific integrity policies from one other Department and two other agencies to compare USDA's 2013 SIP;
- Reviewed OIG Hotline complaints related to scientific integrity within the Department;
- Interviewed USDA agency officials to gain an understanding of the roles and responsibilities related to scientific integrity;
- Reviewed AgLearn training related to scientific integrity;
- Discussed the results of the survey data with OCS and the agencies; and
- Discussed the findings and potential recommendations with OCS and the agencies.

To accomplish one of our objectives, we chose to survey scientists who are required to publish their work. Through discussions with OCS and OIG's Office of Data Sciences (ODS),[45] we determined that research-grade scientists would be the best to survey since publishing research is a part of their evaluation criteria and the communication aspect is affected by the SIP. We obtained a universe of 2,212 individuals who were identified as research-grade scientists within ARS, ERS, FS, and NRCS with the supporting data including name, grade, and email addresses. We tested the universe data of research-grade scientists to determine that the four agencies provided a complete and valid set of data.

With the assistance of ODS, we developed questions to survey research grade scientists within the selected agencies for the purpose of determining their perception of research integrity within the Department. As part of the question development, we reviewed *Progress and Problems: Government Scientists Report on Scientific Integrity at Four Agencies* as one source of guidance.[46] Because the National Science Foundation (NSF) has a basis in science, we contacted NSF's OIG and requested it review and comment on our initial survey questionnaire. We also

[45]ODS applies data analytics to support OIG audits, investigations, and other activities. ODS conducts predictive data analysis, statistical sampling, modeling, computer matching, data mining, and data warehousing of USDA programs and operations. Using data analytics, ODS discovers potential fraud patterns and identifies anomalies in programs for further review. For the purposes of this audit, ODS administered and disseminated the survey, collected the survey responses, and provided the summary results.

[46] Union of Concerned Scientists published this report in October 2015.

presented the questions to OCS and officials at the four agencies for feedback and suggestions. Prior to the release of the survey, we invited 16 research scientists to test the survey using SurveyMonkey.[47] After the scientists completed the survey, we held a teleconference to obtain feedback, and adjusted the survey as deemed necessary.

On July 12, 2016, we initiated the survey by sending emails to the universe of 2,212 research grade scientists. The email contained a link to SurveyMonkey, which allowed us to receive anonymous responses via the Internet. The web-based survey allowed OIG to send periodic email reminders to those who had not completed the survey until we closed it on August 12, 2016. OIG received 1,349 respondents to the survey, or about a 61 percent response rate.

During the course of our audit, we did not solely rely on or verify information in any agency information system, and we make no representation regarding the adequacy of any agency computer system or the information generated from them because evaluating the effectiveness of information system or information technology controls was not one of the engagement objectives.

Since we relied on the work of ODS to conduct the survey and provide us the survey results,[48] we obtained documentation to satisfy that the specialist was qualified, competent in the work we relied upon, and met independence standards. We evaluated the competency and qualifications of the specialist in accordance with generally accepted government auditing standards.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[47] SurveyMonkey is an online survey development tool.
[48] ODS calculated the survey results using the built-in analytics platform in SurveyMonkey.

Abbreviations

ARS	Agricultural Research Service
ASIO	Agency Scientific Integrity Officer
DM	Departmental Manual
DSIO	Departmental Scientific Integrity Officer
ERS	Economic Research Service
FS	Forest Service
NRCS	Natural Resources Conservation Service
NSF	National Science Foundation
OCS	Office of the Chief Scientist
ODS	Office of Data Sciences
OIG	Office of Inspector General
OPM	Office of Personnel Management
PDF	Portable Document Format
REE	Research, Education, and Economics
RGEG	Research Grade Evaluation Guide
SIP	Scientific Integrity Policy
USDA	Department of Agriculture

Appendix A: Survey Results

United States Department of Agriculture
Office of Inspector General
Washington, D.C. 20250

DATE: February 28, 2018

PRODUCT NUMBER: 16-010-01

TO: Dionne Toombs
Director
Office of the Chief Scientist

FROM: Virginia E. B. Rone
Assistant Inspector Gene

SUBJECT: Survey of USDA Scientists Regarding Scientific Integrity

In April 2017, the Office of Inspector General's (OIG) Office of Data Sciences (ODS) released a report that presented the results of the survey we conducted in 2016. The survey was developed to support OIG with Audit Report 50601-0006-31, *Reviewing the Integrity of USDA's Scientific Research Program*. The purpose of the survey was to assess whether U.S. Department of Agriculture (USDA) scientists perceive they can perform and communicate all aspects of their research assignments or projects without inappropriate influence or political interference. The survey was sent to 2,212 USDA research-grade scientists in 4 USDA agencies: the Agricultural Research Service, the Economic Research Service, the Forest Service, and the Natural Resources Conservation Service.

In May, OIG began a further review of that report, and determined that not all aspects of the Quality Control Process, which follows the OIG and USDA Information Quality Guidelines, were adequately completed and documented. We removed the report from our website to complete the review. While we found the report to be substantially correct, we found that there were percentages and tables that needed additional explanation due to the skip logic used in the survey, and we took steps to ensure that the report clearly protected the confidentiality of the respondents. As stated at the December 12, 2017 Audit Exit Conference, the completion of the related audit was delayed pending completion of the Quality Control Process. Attached is the updated final report for your use. This report contains publicly available information and will be posted in its entirety to our website.

Attachment

cc: (with attachments)
Chavonda Jacobs-Young, Acting Under Secretary for Research, Education, and Economics, and Administrator, Agricultural Research Service;
Dan Jiron, Acting Deputy Under Secretary for Natural Resources and Environment;
Robert Johansson, Acting Under Secretary for Farm Production and Conservation;
Mary Bohman, Administrator, Economic Research Service;
Tony Tooke, Chief, Forest Service:
Leonard Jordan, Acting Chief, Natural Resources Conservation Service

Appendix A contains the summary of responses to each question of the survey, provided by ODS. For each question shown below, the reader can see the question number, the wording of the question, answer options, the response percent, response count, the number of respondents that answered the question, and the number that skipped the question. The survey was designed so that the respondents only answered questions that were applicable to the researcher's current position and prior experience. Therefore, a respondent's answer to a previous question may determine that a section was not applicable for that individual, and the survey was designed to move the respondent to the next relevant section of the survey. Because we designed the survey in this manner, some sections of the survey will have lower responses than other sections. The "skipped question" frequency for each question includes respondents who were automatically guided past that question due to its lack of relevance for that respondent.

Q1. Do you participate in scientific research that may result in communicating the findings/outcomes/results to others outside your agency?

Answer Options	Response Percent	Response Count
Yes	99.5%	1,342
No	0.5%	7
	answered question	1,349
	skipped question	0

Q2. What agency do you work for?*

Answer Options	Response Percent	Response Count
ARS	69.2%	928
ERS	6.3%	84
FS	24.1%	323
NRCS	0.3%	4
Other (please specify)	0.1%	2
	answered question	1,341
	skipped question	8

*Nine additional respondents chose "Other (please specify)"; however, these nine respondents specified that they worked for the Forest Service, so they were subsequently converted to the "FS" category in this and all other tables and charts.

Q3. Which category best describes the field of research you conduct for the USDA?		
Answer Options	**Response Percent**	**Response Count**
Economist / Mathematics	7.0%	94
Earth / Environmental Science / Ecology	11.5%	154
Biology	6.6%	89
Entomology	9.8%	131
Plant Pathology / Physiology / Genetics	20.4%	273
Forestry	5.1%	68
Soil Science	6.4%	86
Animal Science	7.5%	101
Public Health	1.0%	13
Engineering	4.8%	65
Chemistry	5.7%	76
Social Science	2.0%	27
Other forms of Biology not listed above	2.9%	39
Other forms of Ecology not listed above	1.7%	23
Other (OR optionally, you may add your Job Series description or code here)	7.6%	102
	answered question	1,341
	skipped question	8

Q4. Please select a category that best represents your work location. I work in:		
Answer Options	**Response Percent**	**Response Count**
Agency HQ	7.0%	94
Agency Field office	25.5%	342
Agency Regional Lab/Center(s)	49.7%	667
University	14.3%	192
Other (please specify)	3.4%	46
	answered question	1,341
	skipped question	8

Q5. My current position is		
Answer Options	**Response Percent**	**Response Count**
Supervisory	64.6%	866
Non-supervisory	35.4%	475
	answered question	1,341
	skipped question	8

Q6. What is the highest level of education you have completed?*		
Answer Options	**Response Percent**	**Response Count**
Bachelors	0.0%	0
Masters	2.5%	33
PhD	96.9%	1,299
Other (please specify)	0.7%	9
	answered question	**1,341**
	skipped question	**8**

***** Of the nine respondents who answered "Other," seven indicated that they have a Ph.D.; two of these have post-doctoral experience, and four others also have their DVM. Thus 97.4 percent (1,306 of 1,341) have at least their Ph.D.

Q7. In relation to the research you perform, what role closest describes your position?	
Answer Options	**Response Percent**
Principal Investigator/Researcher	98.3%
Research Associate	0.4%
Support Personnel to the Research Project	0.1%
Postdoctoral Researcher	1.0%
Other (please specify)	0.2%
answered question	
skipped question	

Q8. How do you directly communicate your research results? (select all that apply)		
Answer Options	**Response Percent**	**Response Count**
Publish in Peer Reviewed Journals	99.4%	1,330
Publish in Trade Journals	30.0%	401
News Media Releases and/or Interviews	38.4%	514
Social Media	7.4%	99
Professional Conferences and Workshops	91.4%	1,223
Agency Website/Newsletter/Publications	55.2%	739
Other (please specify)	8.6%	115
	answered question	**1,338**
	skipped question	**11**

Q9. During your career with the USDA, how many scientific peer reviewed journal articles have you authored or co-authored?		
Answer Options	**Response Percent**	**Response Count**
(0)	1.3%	18
(1 to 5)	6.6%	88
(6 to 15)	7.7%	103
(16 to 25)	9.1%	122
(26 to 75)	42.0%	562
(Greater than 75)	33.3%	445
	answered question	**1,338**
	skipped question	**11**

Q10. On average, how many times are you requested to speak about your work within a calendar year?		
Answer Options	**Response Percent**	**Response Count**
(0 to 2)	29.4%	393
(3-5)	46.3%	619
(6 - 10)	15.9%	213
(11 - 15)	4.6%	61
(15 or more)	3.9%	52
	answered question	**1,338**
	skipped question	**11**

Q11. Are you aware of the USDA's Scientific Integrity Policy (SIP) (DR 1074-001)?		
Answer Options	**Response Percent**	**Response Count**
Yes	82.4%	1,102
No	17.6%	235
Optional Comment		50
	answered question	**1,337**
	skipped question	**12**

Q12. How did you become aware of the SIP? (select all that apply)		
Answer Options	**Response Percent**	**Response Count**
Training	45.0%	497
Agency Bulletins	30.2%	333
Supervisory Notification	22.8%	252
Departmental Memo	29.6%	327
Staff/Leadership Team Meetings	11.8%	130
New Hire Orientation	7.8%	86
Not Sure / Don't Remember	23.8%	263
Other (please specify)	4.0%	44
	answered question	**1,104**
	skipped question	**245**

Q13. Since the implementation of the SIP in May 2013, have you received training on the policy? (select all that apply)*		
Answer Options	**Response Percent**	**Response Count**
I received AgLearn training	53.5%	591
I received classroom training	1.6%	18
I attended a webinar	8.2%	91
I received the PDF version training	4.9%	54
I received this training during new hire orientation	2.6%	29
I have not received any training	9.1%	101
Not sure / Don't Remember	32.5%	359
	answered question	**1,104**
	skipped question	**245**

*94 respondents selected “I have not received any training,” 352 selected “Not sure / Don’t Remember,” and 7 choose both.

Q14. Did you consider the training to have been adequate and sufficient to make you familiar with the USDA's SIP?*

Answer Options	Response Percent	Response Count
Yes	82.0%	821
No	18.0%	180
Optional Comment		114
	answered question	1,001
	skipped question	348

*352 of the 1,001 who answered this question indicated in Q13 that they did not receive any training or that they were not sure / did not remember. Specifically, 349 answered "Not sure / Don't Remember" to Q13 and 3 answered "I have not received any training." Of the 649 who explicitly remembered taking training on the SIP, 603 answered "Yes" to Q14 (93 percent) and 46 answered "No" (7 percent). 31 of the 649 wrote optional comments.

Q15. If you have any recommendations about how to improve the training on the SIP, please list them below. (Optional)

Answer Options	Response Count
	109
answered question	109
skipped question	1,240

Q16. To what extent do you feel your supervisor(s) emphasize(s) the importance of "scientific integrity" as it pertains to your scientific research activities in the USDA?

Answer Options	Response Percent	Response Count
Frequently emphasizes the importance	15.5%	207
Regularly emphasizes the importance	38.6%	514
Seldom emphasizes the importance	24.4%	325
Never emphasizes the importance	9.7%	129
I have no opinion	11.8%	157
Optional Comment		161
	answered question	1,332
	skipped question	17

Q17. To what extent do you feel that your agency promotes a culture of scientific integrity?		
Answer Options	**Response Percent**	**Response Count**
Strongly promotes it	49.9%	665
Somewhat promotes it	32.6%	434
Generally does not promote it	5.9%	79
Rarely promotes it	5.9%	78
I have no opinion	5.7%	76
Optional Comment		110
	answered question	**1,332**
	skipped question	**17**

Q18. Have you been informed by management/supervisors/ public affairs that certain research topics/ papers and conference presentations are sensitive/ controversial/ prominent/ high profile and require additional managerial approval?		
Answer Options	**Response Percent**	**Response Count**
Yes	74.4%	990
No	25.6%	341
	answered question	**1,331**
	skipped question	**18**

Q19. Please identify which research areas have been identified to you as sensitive/ controversial/ prominent/ high profile. (select all that apply)		
Answer Options	**Response Percent**	**Response Count**
Climate Change	42.7%	422
Pollinator Health	22.2%	220
Anti-Microbial Resistance (AMR)	23.2%	229
Gene Editing/Transgenics	35.2%	348
Wildfire Research	7.9%	78
Other (please specify)	41.9%	414
	answered question	**989**
	skipped question	**360**

Q20. In your opinion, were you informed about the sensitivity of the topic in a timely manner?		
Answer Options	**Response Percent**	**Response Count**
Yes	67.7%	670
No	6.9%	68
No Opinion	25.4%	251
Optional Comment		61
	answered question	**989**
	skipped question	**360**

Q21. Does your agency support conducting research on sensitive/ controversial/ prominent/high profile topics?		
Answer Options	**Response Percent**	**Response Count**
Yes	61.0%	809
No	7.5%	99
No Opinion	31.6%	419
Optional Comment		123
	answered question	**1,327**
	skipped question	**22**

Q22. Do you have experience as a Research Grade Scientist with the USDA prior to the implementation of the USDA' SIP in May 2013?		
Answer Options	**Response Percent**	**Response Count**
Yes	84.2%	1,116
No	15.8%	210
	answered question	**1,326**
	skipped question	**23**

Q23. How long have you worked as a research grade scientist at the USDA?*

Answer Options	Response Percent	Response Count
4 - 5 years	3.6%	40
6 - 10 years	15.2%	170
11 - 20 years	43.9%	491
21 years or more	37.4%	418
answered question		1,119
skipped question		230

* Percentages do not reflect the entire population of survey respondents. Those for Q23 are based on only 1,119 of the 1,326 who responded to Q22 as follows: 1,116 "Yes" and 3 "No." (The latter 3 initially choose "Yes" for Q22, then "4-5 years" for Q23, then went back to Q22 and changed their "Yes" to "No," which caused them to be advanced to Q32.)

Q24. As a result of the implementation of the USDA SIP in 2013, do you believe that your ability to publish in professional or scholarly journals has

Answer Options	Response Percent	Response Count
Increased	0.8%	9
Decreased	2.4%	27
Remained the Same	85.4%	951
Don't Know / No Opinion	11.3%	126
answered question		1,113
skipped question		236

Q25. As a result of the implementation of the USDA SIP in 2013, do you believe your ability to participate in peer reviews as a reviewer of scientific manuscripts has:

Answer Options	Response Percent	Response Count
Increased	1.3%	15
Decreased	1.4%	16
Remained the Same	88.4%	984
Don't Know / No Opinion	8.8%	98
answered question		1,113
skipped question		236

Q26. As a result of the implementation of the USDA SIP in 2013, do you believe that your ability to present research findings at professional meetings or conferences has:		
Answer Options	**Response Percent**	**Response Count**
Increased	0.9%	10
Decreased	5.4%	60
Remained the Same	85.1%	947
Don't Know/No Opinion	8.6%	96
	answered question	1,113
	skipped question	236

Q27. As a result of the implementation of the USDA SIP in 2013, do you believe that your ability to participate in professional societies has:		
Answer Options	**Response Percent**	**Response Count**
Increased	3.4%	38
Decreased	7.0%	78
Remained the Same	79.2%	881
Don't Know / No Opinion	10.4%	116
	answered question	1,113
	skipped question	236

Q28. As a result of the implementation of the USDA SIP in 2013, do you believe that your ability to communicate scientific findings with the media has:		
Answer Options	**Response Percent**	**Response Count**
Increased	1.1%	12
Decreased	14.1%	157
Remained the Same	65.0%	723
Don't Know / No Opinion	19.9%	221
	answered question	1,113
	skipped question	236

Q29. In your opinion, has the implementation of the 2013 SIP been beneficial to you?*		
Answer Options	**Response Percent**	**Response Count**
Yes	14.7%	164
No	22.4%	249
No Opinion	62.9%	700
Optional Comment		126
	answered question	**1,113**
	skipped question	**236**

*167 of the 1,113 who answered this question answered “No” to Q11 (awareness of SIP); 2 of these answered “Yes” to Q29, 40 “No,” and 125 “No Opinion.” Of the 946 respondents who were aware of the SIP, 17 percent answered “Yes” to Q29, 22 percent “No,” and 61 percent “No Opinion.”

Q30. In your opinion, have you experienced any challenges as a result of the implementation of the 2013 SIP?*		
Answer Options	**Response Percent**	**Response Count**
Yes	5.7%	63
No	74.7%	824
No Opinion	19.6%	216
Optional Comment		57
	answered question	**1,103**
	skipped question	**246**

*164 of the 1,103 who answered this question answered “No” to Q11 (awareness of SIP); 6 of these answered “Yes” to Q30, 96 “No,” and 62 “No Opinion.” Of the 939 respondents who were aware of the SIP, 6 percent answered “Yes” to Q30, 78 percent “No,” and 16 percent “No Opinion.”

Q31. If you have any comments regarding anything mentioned on this page, please list them here. (optional)	
Answer Options	**Response Count**
	165
answered question	**165**
skipped question	**1,184**

Q32. Have you been instructed to (or been made aware that you should) coordinate with your supervisor and/or the agency Public Affairs/Communications office prior to participating in interviews with sources, such as the news media about your research results?

Answer Options	Response Percent	Response Count
Yes	88.1%	1,165
No	7.9%	104
Not Sure	4.0%	53
Optional Comment		73
	answered question	1,322
	skipped question	27

Q33. Based on information provided to you by your agency, how clear is it how social media may be used as a communication tool with respect to your scientific expertise in your official and personal capacity?

Answer Options	Response Percent	Response Count
Very Clear	13.5%	178
Somewhat Clear	27.3%	361
Mostly Unclear	26.9%	355
Completely Unclear	18.8%	248
Not Applicable / No Opinion	13.6%	180
Optional Comment		143
	answered question	1,322
	skipped question	27

Q34. USDA's SIP prevents political interference/conflict of interest with research results and reporting.*

Answer Options	Response Percent	Response Count
Strongly Agree	11.2%	148
Agree	30.4%	401
I Have No Opinion	27.5%	362
Disagree	9.9%	130
Strongly Disagree	2.7%	35
No Opinion / Not Aware of the SIP Provisions	18.4%	242
	answered question	1,318
	skipped question	31

*231 of the 1,318 who answered this question answered "No" to Q11 (awareness of SIP); 15 of these answered "Strongly Agree" to Q34, 29 "Agree," 11 "Disagree," 7 "Strongly Disagree," 67 "I Have No Opinion," and 102 "No Opinion / Not Aware of the SIP Provisions." Of the 1,087 respondents who were aware of the SIP, 12 percent answered "Strongly Agree" to Q34, 34 percent "Agree," 11 percent "Disagree," 3 percent "Strongly Disagree," 27 percent "I Have No Opinion," and 13 percent "No Opinion / Not Aware of the SIP Provisions."

Q35. If you have comments you wish to share regarding political interference or conflict of interests, please do so here. (optional)	
Answer Options	Response Count
	147
answered question	147
skipped question	1,202

Q36. To what extent would you agree that your research findings (i.e., data and results) have not been altered or suppressed for reasons other than technical merit?		
Answer Options	Response Percent	Response Count
Strongly Agree	53.7%	708
Agree	27.2%	359
I Have No Opinion	9.9%	130
Disagree	6.2%	82
Strongly Disagree	3.0%	39
Optional Comment		93
	answered question	1,318
	skipped question	31

Q37. During the past 3 years, have you been pressured by external interest groups (i.e., non-USDA entities such as businesses, advocacy/stakeholder groups, etc.) to omit or significantly alter your research findings for reasons other than technical merit?		
Answer Options	Response Percent	Response Count
Yes	2.2%	29
No	96.0%	1,262
Don't Know / Don't Recall / I Have No Opinion	1.8%	24
Optional Comment		33
	answered question	1,315
	skipped question	34

Q38. During the past 3 years, have you been pressured by a USDA Departmental or agency official to omit or significantly alter your research findings for reasons other than technical merit?

Answer Options	Response Percent	Response Count
Yes	3.2%	42
No	94.4%	1,242
Don't Know / Don't Recall / I Have No Opinion	2.4%	31
Optional Comment		40
	answered question	1,315
	skipped question	34

Q39. During the past 3 years, has a USDA Departmental or agency official requested that you provide inaccurate or misleading scientific information to groups such as the public, industry, media, or elected/senior government officials?

Answer Options	Response Percent	Response Count
Yes	0.8%	11
No	97.7%	1,285
Don't Know / Don't Recall / I Have No Opinion	1.4%	19
Optional Comment		26
	answered question	1,315
	skipped question	34

Q40. If you answered "yes" to any of the questions on this page, did you report the incident?*

Answer Options	Response Percent	Response Count
Yes	1.1%	15
No	4.0%	52
Don't Know / Don't Recall / I Have No Opinion	0.6%	8
Not Applicable	94.3%	1,240
Optional Comment		40
	answered question	1,315
	skipped question	34

* Of the 68 who answered "Yes" to at least one of the following: Q37, Q38, or Q39, 15 (22 percent) answered "Yes" to Q40, 39 (57 percent) "No," and 14 (21 percent) "Not Applicable." 30 of the 40 comments were written by these 68 respondents.

Q41. Who was the incident reported to? (Select all that apply)		
Answer Options	**Response Percent**	**Response Count**
Supervisory Chain	73.3%	11
Project Coordinator	6.7%	1
Agency Scientific Integrity Officer	0.0%	0
Departmental Scientific Integrity Officer	0.0%	0
Other (please specify)	46.7%	7
	answered question	**15**
	skipped question	**1,334**

Q42. Under what policy or procedure was the incident reported? (Select all that apply)		
Answer Options	**Response Percent**	**Response Count**
Whistleblower Protection Act	0.0%	0
SIP	0.0%	0
Other (please specify)	100.0%	15
	answered question	**15**
	skipped question	**1,334**

Q43. Was your scientific integrity complaint handled to your satisfaction?		
Answer Options	**Response Percent**	**Response Count**
Yes	33.3%	5
No	66.7%	10
Optional Comment		6
	answered question	**15**
	skipped question	**1,334**

Q44. Was your scientific integrity complaint handled promptly?*		
Answer Options	**Response Percent**	**Response Count**
Yes	40.0%	6
No	60.0%	9
If no, how long did it take?		8
	answered question	**15**
	skipped question	**1,334**

***** One of the eight who wrote comments in response to “If no, how long did it take?” chose “Yes.”

Q45. If resolved, who resolved it?		
Answer Options	**Response Percent**	**Response Count**
Supervisory Chain	26.7%	4
Project Coordinator	0.0%	0
Agency Scientific Integrity Officer	0.0%	0
Departmental Scientific Integrity Officer	0.0%	0
Departmental Scientific Integrity Review Panel	0.0%	0
Other (please specify)	73.3%	11
	answered question	**15**
	skipped question	**1,334**

Q46. If your incident was not resolved, please explain here.	
Answer Options	**Response Count**
	7
answered question	**7**
skipped question	**1,342**

Q47. Do you feel like you have been the subject of retaliation by management/supervisor/authoritative individual because of your research results?*		
Answer Options	**Response Percent**	**Response Count**
Yes	3.7%	49
No	96.3%	1,264
If yes, please explain.		47
	answered question	**1,313**
	skipped question	**36**

*37 of the 47 who wrote comments in response to “If yes, please explain” chose “Yes”; 10 of the 47 who wrote comments in response to “If yes, please explain” chose “No” (i.e., 10 of the 1,264 “No” respondents offered comments).

Q48. Since the implementation of the SIP in May 2013, have you been asked to retract or omit data or results that significantly changed information from studies or the publication of your research results for reasons other than technical merit?*

Answer Options	Response Percent	Response Count
Yes	1.5%	20
No	98.5%	1,293
If yes, please explain.		20
	answered question	1,313
	skipped question	36

*7 of the 20 who wrote comments in response to "If yes, please explain." chose "No."

Q49. Are you aware of an established procedure for filing a scientific integrity complaint within your agency?*

Answer Options	Response Percent	Response Count
Yes	39.6%	520
No	60.4%	792
If no, why not?(i.e. no training, no supervisor notification, etc.)		276
	answered question	1,312
	skipped question	37

*10 of the 276 who wrote comments in response to "If no, why not?" chose "Yes."

Q50. Do you know who to contact in case of scientific integrity concerns?

Answer Options	Response Percent	Response Count
Yes	41.7%	547
No	58.3%	765
	answered question	1,312
	skipped question	37

Q51. Have you ever filed a scientific integrity complaint for an alleged violation of the 2013 SIP?

Answer Options	Response Percent	Response Count
Yes	0.3%	4
No	99.7%	1,308
	answered question	1,312

Q52. How would you describe your experience with the complaint process?*		
Answer Options	**Response Percent**	**Response Count**
Very Satisfied	0.0%	0
Somewhat Satisfied	20.0%	1
Mostly Dissatisfied	20.0%	1
Completely Dissatisfied	0.0%	0
I Have No Opinion	60.0%	3
	answered question	**5**
	skipped question	**1,344**

*The "Mostly Dissatisfied" response to Q52 was from someone who initially chose "Yes" for Q51, then after responding to Q52, went back to Q51 and changed "Yes" to "No," which resulted in being advanced to Q54.

Q53. Do you have any suggestions about how to strengthen or improve the complaint process?	
Answer Options	**Response Count**
	1
answered question	**1**
skipped question	**1,348**

Q54. Do you have any other concerns related to scientific integrity that you want to share with OIG?*	
Answer Options	**Response Count**
	481
answered question	**481**
skipped question	**868**

*Over half of the 481 respondents indicated they had no other concerns.

Q55. What is your grade level?*		
Answer Options	**Response Percent**	**Response Count**
GS 11	1.2%	15
GS 12	10.1%	129
GS 13	16.8%	215
GS 14	31.6%	405
GS 15	37.6%	482
ST	2.4%	31
Other (please specify)	0.5%	6
	answered question	**1,283**
	skipped question	**66**

* Of the six who chose "Other (please specify)," one specified "SSTS," another "GS 13," and four did not specify.

Q56. Are you?		
Answer Options	**Response Percent**	**Response Count**
Male	74.6%	932
Female	25.4%	317
	answered question	**1,249**
	skipped question	**100**

Q57. Please select the racial category or categories with which you most closely identify (mark as many as apply).		
Answer Options	**Response Percent**	**Response Count**
American Indian or Alaska Native	0.6%	7
Asian	11.1%	136
Black or African American	2.0%	25
Hispanic or Latino	3.0%	37
Native Hawaiian or Other Pacific Islander	0.0%	0
White	79.6%	975
Other	3.7%	45
	answered question	**1,225**
	skipped question	**124**

AGENCY'S
RESPONSE TO AUDIT REPORT

United States Department of Agriculture
Research Education Economics
Office of the Chief Scientist
Room 338A
Jamie L. Whitten Building
Washington, DC 20250-0110

DATE: February 8, 2018

AUDIT NUMBER: 50601-0006-31

TO: Gil H. Harden
Assistant Inspector General for Audit

ATTN: William Trenkle, Ph.D.
Departmental Scientific Integrity Officer, USDA

FROM: Dionne Toombs, Ph.D.
Director
Office of the Chief Scientist, USDA

SUBJECT: Office of the Inspector General (OIG) Official Draft Audit Report – "Reviewing the Integrity of USDA's Scientific Research Program"

USDA's Chief Scientist and the Office of the Chief Scientist (OCS) appreciate the opportunity to review and comment on this official draft report. We have reviewed the report and have responded to each of the recommendations.

General Comments

We appreciate OIG's recommendations and will implement them as proposed in our responses below.

We are pleased to note that OIG's report did not identify any significant deficiencies in USDA's revised 2016 scientific integrity policy (SIP). OIG's report also found that only a small percentage of USDA research-grade scientist respondents had concerns regarding inappropriate pressure and that the majority (83%) felt that their agencies promoted a culture of scientific integrity. The OIG survey did not identify if the scientists, who perceived inappropriate pressure, resisted the loss of scientific integrity. OIG's report also notes that, because of the inherent presence of integrity in the Department's scientific research, some of the employees may consider the SIP to be redundant. During the audit process, OIG offered recommendations on how to better communicate and identify scientific integrity concerns/culture within USDA. We appreciated and have followed this guidance.

The Chief Scientist and OCS are committed to fostering a culture of integrity within USDA and have been proactively responding to many of the challenges identified in the report. During the survey of research-grade scientists regarding the 2013 SIP, OCS developed the revised 2016 Scientific Integrity Policy (SIP) Departmental Regulation (DR) and Departmental Manual (DM) to consolidate policy and guidance previously issued across two Departmental Regulations, a

handbook, and a guidance document. The revised 2016 SIP incorporated additional clarifications and provisions to foster scientific integrity, implemented more robust and well-defined procedures for responding to scientific integrity concerns, and harmonized procedures for responding to scientific integrity concerns with those for responding to allegations of research misconduct. In conjunction with the revised 2016 SIP, OCS outreach efforts to scientists continues to build a culture of integrity with information on recognizing potential losses of scientific integrity and/or undo pressure and the appropriate mechanisms for reporting concerns.

Recommendation 1
The Office of the Chief Scientist (OCS) should coordinate with each agency to determine the best method to identify why some scientists perceive that there are inappropriate influences that might hinder them from performing all elements of their research.

Agency Response
OCS will continue to increase outreach to the four (4) agencies with "research-grade" staff to ensure that the revised SIP is well publicized with this group of USDA employees and their supervisors through meetings with staff and presentations by the Departmental Scientific Integrity Officer (DSIO) and the Director and Deputy Director of OCS as appropriate. Education and communication, about what is (and what is not) inappropriate influence on research products as well as the opportunities/mechanisms for reporting any loss (perceived or actual) of scientific integrity, will be a primary focus of the outreach. The new AgLearn module, supporting the 2016 SIP, explicitly uses the example of a research-grade scientist being asked to remove a policy statement or judgement from a manuscript as NOT being inappropriate influence, which some scientists may have perceived to be inappropriate influence in the past. The DSIO will convene periodic meetings with Agency Scientific Integrity Officers (ASIOs) to discuss current topics and areas of concern. Additionally, the DSIO will meet with the ASIOs from the four agencies to discuss ways to identify the root causes for perceptions of inappropriate influence on the research-grade scientists.

Estimated Completion Date: The initial meetings between the DSIO and ASIO will be completed by September 30, 2018. Outreach presentations to the agencies has already started and is on-going.

Recommendation 2
Based on the responses to Recommendation 1, OCS should coordinate with each agency to share with other agencies any recognized potential issues or hindrances dealing with scientific integrity, identify any common or systemic problems, and work to develop resolutions that can be implemented across all agencies.

Agency Response
Many of the OCS responses to Recommendation 1 are responsive to this recommendation. If a systemic issue is identified, OCS, and the Chief Scientist, will document the perceived issue impacting scientific integrity and determine the appropriate response(s) in coordination with the agencies. The response determination may involve discussions and strategic planning with ASIOs/ARIOs, and/or the Ethics office, to clarify the issues and identify agency-specific and department-wide actions/needs. Appropriate responses include, but are not limited to, additional outreach and/or education and/or written guidance on the specific issue to agencies/staff. The periodic meetings between the DSIO and ASIOs will be the primary forums for identifying potential challenges and dissemination of solutions.

Estimated Completion Date: Identification of potential common problems and proposal of solutions will be completed by December 31, 2018

Recommendation 3
OCS should coordinate with each agency to determine a methodology of outreach that best communicates the importance of supervisors and agencies emphasizing and promoting a culture of scientific integrity.

Agency Response
Outreach to supervisors is an important topic that OCS recognized while preparing the revised 2016 SIP. Section 7(g) of the 2016 SIP provides guidance to managers and supervisors as to their duty to be aware of the principles of scientific integrity in the DR, to implement and comply with the DR and DM 1074-001, to abide by the USDA Code of Scientific Ethics, reporting requirements, and need to ensure that their employees are informed about, and receive training on, the revised 2016 SIP (DR 1074-001). Part of the outreach presentations by the DSIO (See Agency Response to recommendations 1 and 2) includes explicit reference to this guidance and this guidance will continue to be shared with agencies and staff at outreach presentations.

As OCS identifies challenges (see Agency Response to Recommendation 2) within USDA agencies that may impact the perception of scientific integrity, outreach can be restructured, as appropriate, to include case studies, positive examples and/or discussion points to enable agencies to minimize potential impact/hinderances on integrity processes. The DSIO will meet with the four agency ASIOs to identify the best agency-specific method for reaching the relevant supervisors of research scientists.

Estimated Completion Date: December 31, 2018

Recommendation 4
OCS should evaluate methods of outreach to the Department's scientists to determine the most effective type of training, i.e. AgLearn, classroom, webinar, etc. for USDA scientists so that they can best enhance their understanding of key Scientific Integrity Policy (SIP) elements. OCS should coordinate with the agencies to make a determination on how best to implement these methods.

Agency Response
The OCS is committed to identifying and using the most effective pedagogical methods for adult learning. Some of the prior responses partially address this recommendation. The AgLearn modules have been revised to reflect the revised 2016 SIP and there is a shorter module for non-scientists, which has potential for refresher training usage. The OCS is evaluating the completion/penetration of the outreach of the AgLearn 2016 SIP modules and intends to document completion (in conjunction with agencies) by research-grade scientists and will review the classifications of employees that have/have not completed the AgLearn 2016 SIP modules. There are multiple intervention types that could be developed including, but not limited to, "Integrity minutes" (a short primer for staff to spur discussion of Integrity issues and success stories), posters/multimedia (that describe one facet of the SIP to invite discussion and raise awareness), and Classroom/Webinar/seminar presentations (both with and without peer learning initiatives). OCS and agencies will continue to evaluate and identify future training methods to reach departmental scientists.

Estimated Completion Date: Initial poll of completion of the 2016 SIP AgLearn module will be completed by July 31, 2018. Identification of new training methods will be completed by December 31, 2018.

Recommendation 5
OCS should coordinate with the agencies to ensure their scientists subject to the SIP complete the updated 2016 AgLearn training on the SIP and receive refresher training as necessary or on a regular basis.

Agency Response
The OCS plans to address the compliance of current USDA research-grade scientists, as discussed in the Agency Response to Recommendation 4. The appropriate time frame for refresher training (annually, bi-annually, etc) and the mechanism for appropriate refresher training (AgLearn short module, "Integrity Minutes", webinar/discussion/peer learning of case studies or success stories) will be evaluated and discussed with the agencies at periodically scheduled meetings. OCS will synergize office outreach efforts surrounding the revised 2016 SIP with this refresher training to help reinforce the culture of integrity across USDA. The coordination will be achieved through periodic meetings of the DSIO and ASIOs.

Estimated Completion Date: The completion of the AgLearn 2016 SIP module by all scientists will be documented and completed by Dec 31, 2018. Identification of the appropriate refresher training type and interval, and plans for implementation will be completed by February 28, 2019.

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