MEMORANDUM

Date: March 30, 2016

To: Shelly Wilkie Martinez, Desk Officer
Office of Management and Budget

From: John R. Gawalt, Director
National Center for Science and Engineering Statistics
National Science Foundation

Via: Suzanne Plimpton, Clearance Officer
National Science Foundation

Subject: Request for Approval of Non-substantive Changes to the Survey of Earned
Doctorates (SED) questionnaire

The National Science Foundation requests approval of non-substantive changes to the SED
questionnaire. For the 2017 cycle, NSF proposes modifying wording and reordering items
based on the results of the cognitive testing that was carried out under the generic clearance of
survey improvement projects (OMB #3145-0174) and approved by OMB on 17 March 2015.
The testing results identified improvements to increase consistency of item interpretation
among respondents and reduce discrepancies in educational history timelines, both of which
are expected to improve data quality.

The cognitive testing also identified new items that would be beneficial to add to the SED
instrument to provide a more detailed picture of doctoral graduates. However, items that
request "new" information are not addressed in this memo but will be presented to OMB as
potential changes for the 2018 SED when the full clearance package is submitted at the
beginning of 2017.

A brief description of the cognitive testing follows, along with a description of the proposed
modifications to the SED instrument. Appendix A displays images of the current questionnaire
items and their proposed modifications. Appendix B contains the current 2016 SED paper
questionnaire as a reference.

SED Cognitive Testing

Purpose. The purpose of the cognitive testing was to identify respondent difficulty with
question wording and to simplify the data editing process by clarifying questions. Part A of the

SED questionnaire is intended to collect information about respondents' educational history. The current organization of the questionnaire has evolved, in part, due to the space limitations of the paper form. Now that 90% of SED respondents complete the survey online, the instrument was reorganized to optimize the Web mode. As such, the questions comprising Part A were reordered to lead respondents sequentially through their educational history. In addition, question wording was elaborated to clarify the information being sought.

Methodology. The survey items were reordered and tested using a Web survey and think-aloud interviews with participants. The interview results were then used to revise the instrument and re-test it, following the same procedure with new participants. Once it was clear that the reordering of the items was effective in the Web instrument, an equivalent paper version was developed and similarly tested (because a few educational institutions still use paper SED questionnaires). The whole process involved four rounds of testing the Web instrument (with 65 participants) and three rounds of testing the paper instrument (with 29 participants).

Results. The cognitive testing results revealed that several minor modifications to question wording, terminology, and response options could be made to improve data quality and respondent experience. These types of modifications were not confined to Part A of the questionnaire, but pertained to a few items in Part B, as well. Moreover, the reordering and elaboration of items in Part A provided a more complete picture of respondent educational history.

One of the measures that is calculated based on information gathered from Part A of the SED questionnaire is time-to-degree. By requesting a more thorough accounting of respondents' educational history, less data editing is expected to be required to fill in gaps and/or resolve discrepancies.

Proposed Modifications to the 2017 SED Instrument

All of the proposed changes are listed here, and images of the current and proposed forms are provided in Appendix A. Timed testing of the revised paper questionnaire demonstrated no change in the estimated respondent burden compared with the current form.

Part A of the Questionnaire.

1. In the 2016 SED, respondents are specifically asked questions about their research doctoral degree, their most recent master's degree, and their first bachelor's degree. Then they are to provide similar information for each "additional postsecondary degree" that they received. Because it may be unclear to respondents that they should report their associate's degrees, in the 2017 SED we propose asking specifically about such degrees. We ask specifically for additional bachelor's and master's degrees, as well. Moreover, for the additional postsecondary degrees that respondents report in the 2016 SED, they are asked for the month and year that the degree was *granted*. In the

2017 SED, we propose asking for the month and year that the degree was *started*, as well. This will provide a clearer picture of a respondent's educational timeline. (See figures A.1.Old and A.1.New in Appendix A.)

2. In the 2016 SED, respondents are asked for the primary field of study of their bachelor's degree. For the 2017 SED, we propose allowing respondents to provide two fields of study if they had a double major for their bachelor's degree. (See figures A.2.Old and A.2.New in Appendix A.)

3. In the 2016 SED, respondents are asked, "Was a master's degree a prerequisite for admission to your doctoral program?" Because of the ambiguity of this question in relation to the variety of doctoral program structures that exist, we propose clarifying this question by offering additional response options. (See figures A.3.Old and A.3.New in Appendix A.)

4. In the 2016 SED, respondents are asked whether they are earning or have earned an MD or a DDS. In the 2017 SED, we propose asking whether they are earning or have earned *any* professional doctoral degree, such as an MD, DDS, DVM, JD, PsyD, or DDiv. (See figures A.4.Old and A.4.New in Appendix A.)

5. In asking about sources of financial support, we propose changing response option b from "Grant" to "Dissertation grant" to prevent respondents from reporting duplicate funding sources (e.g., "grant" and "research assistantship," both referring to the same funds). (See figures A.5.Old and A.5.New in Appendix A.)

6. We propose modifying the question about starting graduate school (item A11 in the 2016 SED) from "In what month and year did you first enter <u>any</u> graduate school in <u>any</u> program or capacity?" to "In what month and year did you first enter any graduate program, even if you did not earn a degree?" for greater clarity.

<u>Part B of the Questionnaire</u>.

1. We propose clarifying the wording of the question stem and response options for the postgraduation plans item to help respondents select the best fit for their circumstances. In addition, the old response option pertaining to "predoctoral employment" was determined to be ambiguous, so for clarity we propose separating it into its own question, which would be asked of respondents who indicate they have accepted or are employed in a position other than a postdoc. (See figures B.1.Old, B.1a.New, and B.1b.New in Appendix A.)

2. We propose combining "postdoc fellowship" and "postdoc research associateship" into one response option when asking about the nature of one's postdoc, because respondents have difficulty distinguishing between these two responses. (See figures B.2.Old and B.2.New in Appendix A.)
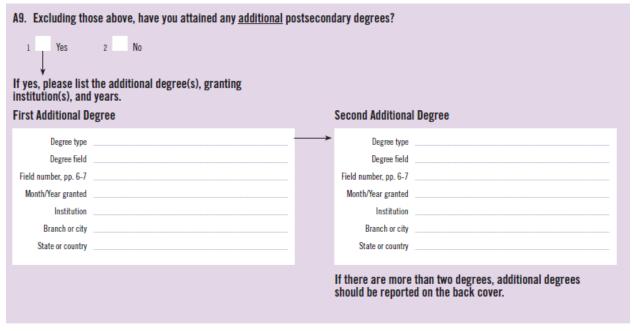
3. In the list of principal employers (item B6 in the 2016 SED), we propose changing the response option "Not for profit organization" to "Nonprofit organization (including private foundation)" to better align the terminology with another survey item that includes similar response options (B5 in the 2016 SED). (See figure B.3.Old in Appendix A; an image of the revised question is not available.)

4. We propose adding the response option of "No financial support (unpaid position)" to the question asking about the main source of financial support for a postdoc or other training. (See figures B.4.Old and B.4.New in Appendix A.)

5. We propose clarifying the response option of "professional services to individuals" in the question asking about work activities by adding the following examples "(such as healthcare, counseling, financial services, legal services, consulting)." (See figures B.5.Old and B.5.New in Appendix A.)

Appendix A

The first image ("Old") in each pair is from the current 2016 SED paper questionnaire and the second image ("New") is the proposed change. The format differs slightly in the Web version of the questionnaire.

Part A.

A.1.Old.

A9. Excluding those above, have you attained any <u>additional</u> postsecondary degrees?

1 ☐ Yes   2 ☐ No

If yes, please list the additional degree(s), granting institution(s), and years.

First Additional Degree	Second Additional Degree
Degree type _____	Degree type _____
Degree field _____	Degree field _____
Field number, pp. 6–7 _____	Field number, pp. 6–7 _____
Month/Year granted _____	Month/Year granted _____
Institution _____	Institution _____
Branch or city _____	Branch or city _____
State or country _____	State or country _____

If there are more than two degrees, additional degrees should be reported on the back cover.

A.1.New.

ASSOCIATE'S DEGREE(S)

A9. Have you received an <u>associate's</u> degree (e.g., AA, AS) or equivalent?

1 ☐ Yes   2 ☐ No ⟶ **GO TO A10 on PAGE 4**

a. Please provide the following information for the <u>first</u> associate's degree that you received.

Institution name ....

Branch or city ....

State or U.S. territory .....

Country ....

b. Please choose the field number from the Field of Study foldout on page 15 that best matches your field of study for this associate's degree.

☐☐☐ Field number, see foldout

If you do not think that the field you selected above adequately reflects your field for this degree, please write the name of the field in the box below.

Name of field

c. When did you <u>start</u> this associate's degree and when was the degree <u>granted</u>?

Month/year degree <u>started</u>: ☐☐ Month ☐☐☐☐ Year   Month/year degree <u>granted</u>: ☐☐ Month ☐☐☐☐ Year

d. Have you ever received another associate's degree (e.g., AA, AS) or equivalent?

1 ☐ Yes   2 ☐ No ⟶ **GO TO A10 on PAGE 4**

Second Associate's Degree

Institution _____

Branch or city _____

State or U.S. territory _____

Country _____

Field number, see foldout _____

Month/Year started _____

Month/Year granted _____

Third Associate's Degree

Institution _____

Branch or city _____

State or U.S. territory _____

Country _____

Field number, see foldout _____

Month/Year started _____

Month/Year granted _____

A.2.Old.

A8. The next few questions ask about the degrees you have received. Please provide the following information for this doctoral degree, your most recent master's degree and your <u>first</u> bachelor's degree in the appropriate columns below.

	This research doctoral degree	Most recent master's degree (e.g., MS, MA, MBA) or equivalent	First bachelor's degree (e.g., BA, BS, AB) or equivalent
a. Have you received a degree of this type?	[X] Yes [ ] No	1 [ ] Yes 2 [ ] No	1 [ ] Yes 2 [ ] No
b. Month/year degree <u>granted</u>	[ ][ ] Month [ ][ ][ ][ ] Year	[ ][ ] Month [ ][ ][ ][ ] Year	[ ][ ] Month [ ][ ][ ][ ] Year
c. Month/year that you <u>started</u> your degree	[ ][ ] Month [ ][ ][ ][ ] Year	[ ][ ] Month [ ][ ][ ][ ] Year	[ ][ ] Month [ ][ ][ ][ ] Year
d. Primary field of study			
e. Field number from list on pp. 6-7	[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ]
f. Institution name			
g. Branch or city			
h. State or province			
i. Country	USA		

A.2.New.

b. Please choose the field number from the Field of Study foldout on page 15 that best matches your field of study (i.e., major) for this bachelor's degree.

[ ][ ][ ] Field number, see foldout

If you do not think that the field you selected above adequately reflects your field for this degree, please write the name of the field in the box below.

[   ]

Name of field

c. Did you complete a double major for this bachelor's degree?

1 [ ] Yes   2 [ ] No

Please choose the field number from the Field of Study foldout on page 15 that best matches your second major for this bachelor's degree.

[ ][ ][ ] Field number, see foldout

If you do not think that the field you selected above adequately reflects your field for this degree, please write the name of the field in the box below.

[   ]

Name of field

A.3.Old.

A10. Was a master's degree a prerequisite for admission to your doctoral program?

1 [ ] Yes   2 [ ] No

A.3.New.

d. Which of the following best describes this master's degree?

1 [ ] This master's degree was a <u>prerequisite</u> for admission to my doctoral program ⟶
2 [ ] This master's degree was <u>not</u> a prerequisite and it did <u>not</u> fulfill any credits for my doctoral program ⟶ → GO TO f BELOW
3 [ ] This master's degree was <u>not</u> a prerequisite, but it <u>fulfilled credits</u> for my doctoral program

e. About how many of the credits from this master's degree counted towards your doctoral degree?
Mark (X) one

1 [ ] Some   2 [ ] Most   3 [ ] All

A.4.Old.

A15. Are you earning, or have you earned, an MD or a DDS?

	a **ARE EARNING?**		b **HAVE EARNED?**	
MD	☐ Yes	☐ No	☐ Yes	☐ No
DDS	☐ Yes	☐ No	☐ Yes	☐ No

A.4.New.

A13. In addition to your current research doctoral degree, have you earned or are you earning a professional doctoral degree, such as an MD, DDS, DVM, JD, PsyD, or DDiv?

1 ☐ Yes, I am currently earning a professional doctoral level degree

2 ☐ Yes, I have already earned a professional doctoral level degree

3 ☐ No ⟶ **GO TO A14 BELOW**

A.5.Old.

A5. Please indicate whether each of the following was a source of financial support during graduate school.

Mark (X) Yes or No for each

		Yes	No
a	Fellowship, scholarship	1 ☐	2 ☐
b	Grant	1 ☐	2 ☐
c	Teaching assistantship	1 ☐	2 ☐
d	Research assistantship	1 ☐	2 ☐
e	Other assistantship	1 ☐	2 ☐
f	Traineeship	1 ☐	2 ☐
g	Internship, clinical residency	1 ☐	2 ☐
h	Loans (from any source)	1 ☐	2 ☐
i	Personal savings	1 ☐	2 ☐
j	Personal earnings during graduate school (other than sources listed above)	1 ☐	2 ☐
k	Spouse's, partner's, or family's earnings or savings	1 ☐	2 ☐
l	Employer reimbursement/assistance	1 ☐	2 ☐
m	Foreign (non-U.S.) support	1 ☐	2 ☐
n	Other - Specify	1 ☐	2 ☐

A.5.New.

A15. **Please indicate whether each of the following was a source of financial support for your educational and living expenses during <u>graduate</u> school.**

Include sources of support for all graduate-level degree programs (master's and doctoral).

Mark (X) Yes or No for each

		Yes	No
a	Fellowship, scholarship	1 ☐	2 ☐
b	Dissertation grant	1 ☐	2 ☐
c	Teaching assistantship	1 ☐	2 ☐
d	Research assistantship	1 ☐	2 ☐
e	Other assistantship	1 ☐	2 ☐
f	Traineeship	1 ☐	2 ☐
g	Internship, clinical residency	1 ☐	2 ☐
h	Loans (from any source)	1 ☐	2 ☐
i	Personal savings	1 ☐	2 ☐
j	Personal earnings during graduate school (other than sources listed above)	1 ☐	2 ☐
k	Spouse's, partner's, or family's earnings or savings	1 ☐	2 ☐
l	Employer reimbursement/assistance	1 ☐	2 ☐
m	Foreign (non-U.S.) support	1 ☐	2 ☐
n	Other - Specify	1 ☐	2 ☐

Part B.

B.1.Old.

B3. What is the status of your postgraduate plans (in the next year)?

Mark (X) one

1. ☐ Returning to, or continuing in, predoctoral employment ⎤
2. ☐ Have signed contract or made definite commitment for a "postdoc" or other work ⎦ → **GO TO B4**

3. ☐ Negotiating with one or more specific organizations ⎤
4. ☐ Seeking position but have no specific prospects
5. ☐ Other full-time degree program (e.g., MD, DDS, JD, MBA, etc.)
6. ☐ Do not plan to work or study (e.g., family commitments, etc.) ⎥ → **SKIP TO C1, P.10**
7. ☐ Other - Specify
   ☐ ⎦

B.1a.New.

B2. What best describes the status of your postgraduate plans?

Mark (X) one

1. ☐ I accepted or began a postdoc or other training position (A "postdoc" is a temporary position primarily for gaining additional education and training in research, awarded in academe, industry, government, or a nonprofit organization.) → **GO TO POSTDOC OR OTHER TRAINING on PAGE 8**
2. ☐ I accepted or am employed in a position other than a postdoc or training position → **GO TO EMPLOYED OTHER THAN POSTDOC OR TRAINING on PAGE 9**
3. ☐ I am negotiating an offer of employment with one or more specific organizations ⎤
4. ☐ I am seeking a position but currently have no offer of employment → **GO TO NEGOTIATING OR SEEKING on PAGE 11**

5. ☐ I am enrolling in a full-time degree program (e.g., PhD, MD, DDS, JD, MBA, etc.) ⎤
6. ☐ I do not plan to work or study (e.g., family commitments, etc.)
7. ☐ Other - Specify → **GO TO PART C on PAGE 11**

B.1b.New.

B17. Is your position with the <u>same employer</u> you worked for <u>during</u> your doctoral studies or <u>before</u> you started your doctoral studies?

Mark (X) one

1 ☐ Yes, I first worked for this employer <u>before</u> I started my doctoral studies

2 ☐ Yes, I first worked for this employer <u>during</u> my doctoral studies

3 ☐ No ⟶ **GO TO PART C**

B.2.Old.

B4a. What best describes the nature of your further training or study?

Mark (X) one

1 ☐ "Postdoc" fellowship ————————————┐

2 ☐ "Postdoc" research associateship

3 ☐ Traineeship   **GO TO B5**

4 ☐ Internship, clinical residency

5 ☐ Other Training - Specify

☐

B.2.New.

B3. What best describes the nature of your postdoc or other training?

Mark (X) one

1 ☐ Postdoc fellowship or research associateship

2 ☐ Traineeship

3 ☐ Internship, clinical residency

4 ☐ Other training - Specify

☐

B.3.Old.

B6. What <u>one</u> type of principal employer will you be working for (or training with) in the next year?

EDUCATION

1. ☐ U.S. 4-year college or university other than medical school
2. ☐ U.S. medical school *(including university-affiliated hospital or medical center)*
3. ☐ U.S. university-affiliated research institute
4. ☐ U.S. community or two-year college
5. ☐ U.S. preschool, elementary, middle, secondary school or school system
6. ☐ Foreign educational institution

GOVERNMENT *(other than educational institution)*

7. ☐ Foreign government
8. ☐ U.S. federal government
9. ☐ U.S. state government
10. ☐ U.S. local government

PRIVATE SECTOR *(other than educational institution)*

11. ☐ Not for profit organization
12. ☐ Industry *(for profit)*

OTHER

13. ☐ Self-employed
14. ☐ Other - Specify _____

_____

B.4.Old.

B5. *(If postdoc or further training)* **What will be the main source of financial support for your "postdoc" or further training within the next year?**
Mark (X) one

1 ☐ U.S. government

2 ☐ Industry/business

3 ☐ College or university

4 ☐ Private foundation

5 ☐ Nonprofit, other than private foundation or college

6 ☐ Foreign government

7 ☐ Other – Specify _____

_____

8 ☐ Unknown

B.4.New.

B7. **What will be the main source of financial support for your postdoc or other training?**
Mark (X) one

1 ☐ U.S. government

2 ☐ Industry/business

3 ☐ College or university

4 ☐ Private foundation

5 ☐ Nonprofit, other than private foundation or college

6 ☐ Foreign government

7 ☐ No financial support (unpaid position)

8 ☐ Other – Specify _____

_____

B.5.Old.

B10. What will be your primary and secondary work activities?

Mark (X) one in each column

	a PRIMARY	b SECONDARY
Research and development	1 ☐	. . . . . . 1 ☐
Teaching	2 ☐	. . . . . . 2 ☐
Management or administration	3 ☐	. . . . . . 3 ☐
Professional services to individuals	4 ☐	. . . . . . 4 ☐
Other – Specify .5 ☐		. . . . . . 5 ☐

☐ *Mark (X) if no secondary work activities*

B.5.New.

B6. What will be your primary and secondary work activities?

Mark (X) one in each column

	a PRIMARY	b SECONDARY
Research and development	1 ☐	. . . . . . 1 ☐
Teaching	2 ☐	. . . . . . 2 ☐
Management or administration	3 ☐	. . . . . . 3 ☐
Professional services to individuals . . . . . 4 ☐ (such as healthcare, counseling, financial services, legal services, consulting)		. . . . . . 4 ☐
Other – Specify .5 ☐		. . . . . . 5 ☐

No secondary work activities . . . . ☐

Appendix B

Current 2016 SED Paper Questionnaire

See separate PDF file.