

Appendix C: Topline General Public Survey

PEW RESEARCH CENTER
 GENERAL PUBLIC SCIENCE SURVEY
 TOPLINE
 AUGUST 15-25, 2014
 N=2,002

NOTE: ALL NUMBERS ARE PERCENTAGES. ANY PERCENTAGES GREATER THAN ZERO BUT LESS THAN 0.5% ARE REPLACED BY AN ASTERISK (*). COLUMNS/ROWS MAY NOT TOTAL 100% DUE TO ROUNDING.

ASK ALL:

Q.1 All in all, are you satisfied or dissatisfied with the way things are going in this country today?

Aug 15-25, 2014 ³⁹	
26	Satisfied
70	Dissatisfied
4	Don't know/Refused (VOL.)

ASK ALL:

Q.2 We'd like you to compare the United States to other industrialized countries in a few different areas. (First,) what about... **[INSERT ITEM; READ AND RANDOMIZE]? [READ FOR FIRST ITEM, THEN AS NECESSARY: Do you think the U.S. is the BEST IN THE WORLD, above average, average or below average in [ITEM] compared to other industrialized countries?]**

		Best in the world	Above average	Average	Below average	(VOL.) DK/Ref
a.	Its scientific achievements					
	Aug 15-25, 2014	15	39	34	9	3
	Apr 28-May 12, 2009	17	47	26	5	4
	TREND FOR COMPARISON:					
	<i>AAAS scientists survey:</i>					
	Sept 11-Oct 13, 2014 ⁴⁰	45	47	6	1	*
	May 1-June 14, 2009	49	45	5	1	*
b.	Its military					
	Aug 15-25, 2014	39	37	15	5	3
	Apr 28-May 12, 2009	42	39	13	3	3
c.	Its economy					
	Aug 15-25, 2014	7	26	36	29	2
	Apr 28-May 12, 2009	12	22	33	31	3

³⁹ Trends not shown. See [Pew Research](http://www.pewresearch.org) for trends from 1988 to present.

⁴⁰ Survey of AAAS members conducted online. The share giving no answer to each question is listed under the "DK/Ref. (VOL.);" column. The question stem for the AAAS survey was "Compared with other industrialized countries, how would you rate the United States with regard to its overall scientific achievements?" RESPONSE OPTIONS: Best in the world; Above average; Average; Below average."

Q.2 CONTINUED...

		<u>Best in the world</u>	<u>Above average</u>	<u>Average</u>	<u>Below average</u>	(VOL.) DK/Ref
NO ITEM D						
e.	Science, technology, engineering and math education for grades K to 12 Aug 15-25, 2014	7	22	39	29	3
	TREND FOR COMPARISON: <i>AAAS scientists survey:</i> Sept 11-Oct 13, 2014 ⁴¹	1	15	38	46	*
f.	Its political system Aug 15-25, 2014 Apr 28-May 12, 2009	12 19	22 31	32 29	31 16	3 5
	FORM 1 ONLY: [N=1,001]					
gF1.	Medical treatment Aug 15-25, 2014	17	34	29	20	1
	TREND FOR COMPARISON: <i>AAAS scientists survey:</i> Sept 11-Oct 13, 2014 ⁴²	25	39	22	13	*
	FORM 2 ONLY: [N=1,001]					
hF2.	Its health care Aug 15-25, 2014 Apr 28-May 12, 2009	9 15	16 23	32 32	39 27	3 2

ASK ALL:

Now I'd like to ask you some questions about science.

Q.3 How much do you ENJOY keeping up with news about science – a lot, some, not much, or not at all?

<u>Aug 15-25, 2014</u>		<u>Apr 28-May 12, 2009</u>	
37	A lot	35	
35	Some	41	
18	Not much	16	
9	Not at all	8	
1	Don't know/Refused (VOL.)	1	

⁴¹ AAAS scientists question stem was: "Compared to other industrialized countries, how would you rate the United States in the following area... science, technology, engineering and math education for grades K to 12?"

⁴² AAAS scientists question stem: "Compared to other industrialized countries, how would you rate the United States in the following area...medical treatment?"

ASK ALL:

Q.4 Overall, has science made life easier or more difficult for most people?

Aug 15-25, <u>2014</u>		Apr 28-May 12, <u>2009</u>	
79	Easier	83	
15	More difficult	10	
1	Not had much of an effect (VOL.)	1	
4	Don't know/Refused (VOL.)	6	

ASK ALL:

Q.5 Has science had a mostly positive or mostly negative effect on the quality of **[INSERT ITEM; RANDOMIZE]** in the U.S.? What about **[NEXT ITEM]**? **[IF NECESSARY: Has science had a mostly positive or mostly negative effect on the quality of [ITEM] in the U.S.?)**

		<u>Mostly positive</u>	<u>Mostly negative</u>	<u>Not had much of an effect</u>	(VOL.) <u>DK/Ref</u>
a.	Food				
	Aug 15-25, 2014	62	34	1	3
	Apr 28-May 12, 2009 ⁴³	66	24	2	8
b.	Health care				
	Aug 15-25, 2014	79	18	1	3
	Apr 28-May 12, 2009	85	10	1	4
c.	The environment				
	Aug 15-25, 2014	62	31	2	5
	Apr 28-May 12, 2009	66	23	2	8

**QUESTIONS 6 THROUGH 9 HELD FOR FUTURE RELEASE
NO QUESTION 10-11**

ASK ALL:

Q.12 In your opinion, do government investments in **[INSERT ITEM; RANDOMIZE]** usually pay off in the long run, or are they not worth it?

		<u>Yes, pay off in the long run</u>	<u>No, aren't worth it</u>	(VOL.) <u>DK/Ref</u>
a.	Basic scientific research			
	Aug 15-25, 2014	71	24	5
	Apr 28-May 12, 2009	73	18	9
b.	Engineering and technology			
	Aug 15-25, 2014	72	22	6
	Apr 28-May 12, 2009	74	17	9

⁴³ In 2009, the question stem did not explicitly mention "in the U.S.". The question wording was: "Has science had a mostly positive or mostly negative effect on the quality of [INSERT ITEM; RANDOMIZE]? What about [NEXT ITEM]? [IF NECESSARY: Has science had a mostly positive or mostly negative effect on the quality of [ITEM]?"

ASK ALL:Q.13 Which of these comes closer to your view? **[READ AND RANDOMIZE RESPONSE OPTIONS]**

Aug 15-25, <u>2014</u>		Apr 28-May 12, <u>2009</u>
61	Government investment in research is ESSENTIAL for scientific progress [OR]	60
34	Private investment will ensure that enough scientific progress is made, even without government investment	29
5	Don't know/Refused (VOL.)	11

NO QUESTION 14-15**ASK ALL:**

Now a few questions about some issues...

[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]**ASK ALL:**

Q.16 Which comes closer to your view? **[READ AND RANDOMIZE]:** Humans and other living things have evolved over time **[OR]** Humans and other living things have existed in their present form since the beginning of time.

IF EVOLVED (Q.16=1), ASK:

Q.17 And do you think that...**[READ OPTIONS AND RANDOMIZE]:** Humans and other living things have evolved due to natural processes such as natural selection **[OR]** A supreme being guided the evolution of living things for the purpose of creating humans and other life in the form it exists today?

	-----Evolved over time-----				Existed in	
	<i>Due to</i>	<i>Supreme</i>	(VOL.)		(VOL.)	
	<i>natural</i>	<i>being guided</i>	<i>DK/</i>	<i>present form</i>	<i>DK/</i>	
	<i>processes</i>	<i>evolution</i>	<i>Ref</i>	<i>since beginning</i>	<i>Ref</i>	
	<u>Total</u>					
Aug 15-25, 2014	65	35	24	5	31	4
Feb 27-Mar 16, 2014	61	34	23	4	34	5
Mar 21-Apr 8, 2013	60	32	24	4	33	7
Apr 28-May 12, 2009 ⁴⁴	61	32	22	7	31	8

TRENDS FOR COMPARISON:*AAAS scientists survey*

Sept 11-Oct 13, 2014 ⁴⁵	98	90	8	1	2	*
May 1-June 14, 2009	97	87	8	2	2	1

⁴⁴ Similar questions on beliefs about evolution were asked in Pew Research surveys in July 2006 and July 2005. Beliefs about evolution were preceded by a question about whether or not respondents believed in God. That survey context may influence responses to questions about evolution. For details see topline in "[Many Americans Uneasy with Mix of Religion and Politics](#)", August 24, 2006.

⁴⁵ The nested Q17 responses do not add to the net of 98% on Q16 due to rounding.

[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]

ASK ALL:

Q.18 From what you've heard or read, do scientists generally agree that humans evolved over time, or do they not generally agree about this?

		TRENDS FOR COMPARISON:		
Aug 15-25,		Apr 28- May 12,	July 2006 ⁴⁶	July 2005
<u>2014</u>		<u>2009</u>		
66	Yes, scientists generally agree that humans evolved over time	60	62	54
29	No, scientists do not generally agree that humans evolved over time	28	28	33
6	Don't know/Refused (VOL.)	11	10	13

NO QUESTION 19

[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]

ASK FORM 1 ONLY: [N=1,001]

Q.20F1 Which of these three statements about the earth's temperature comes closest to your view?

[READ AND RANDOMIZE FIRST TWO OPTIONS; KEEP THIRD OPTION LAST]:

Aug 15-25,		Apr 28-May 12,
<u>2014</u>		<u>2009</u> ⁴⁷
50	The earth is getting warmer mostly because of human activity such as burning fossil fuels [OR]	49
23	The earth is getting warmer mostly because of natural patterns in the earth's environment	36
25	There is no solid evidence that the earth is getting warmer	11
2	Don't know/Refused (VOL.)	4

TRENDS FOR COMPARISON:

	Mostly b/c of human activity such as burning <u>fossil fuels</u>	Mostly b/c of natural patterns in earth's <u>environment</u>	No solid evidence earth getting <u>warmer</u>	<u>No answer</u>
<i>AAAS scientists survey</i> ⁴⁸				
Sept 11-Oct 13, 2014	87	9	3	1
May 1-June 14, 2009	84	10	4	2

⁴⁶ Question wording for July 2006 and earlier asked "From what you've heard or read, is there general agreement among scientists that humans evolved over time, or not?"

⁴⁷ Response options for the 2009 survey were, "The earth is getting warmer mostly because of natural changes in the atmosphere; the earth is getting warmer mostly because of human activity such as burning fossil fuels; the earth is not getting warmer."

⁴⁸ Question wording for 2009 and 2014 scientists survey: "From what you've read and heard, do you think ... [RANDOMIZE RESPONSE OPTIONS 1 & 2]." One of the response options in 2009 was worded differently. It read "the earth is getting warmer mostly because of natural changes in the atmosphere."

**[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]
ASK FORM 2 ONLY: [N=1,001]**

Q.21AF2 From what you've read and heard, is there solid evidence that the average temperature on earth has been getting warmer over the past few decades, or not?

ASK IF EARTH IS GETTING WARMER (Q.21AF2=1):

Q.21BF2 Do you believe that the earth is getting warmer **[READ AND RANDOMIZE: mostly because of human activity such as burning fossil fuels/mostly because of natural patterns in the earth's environment]**?

	-----Yes, solid evidence-----					(VOL.)	
	Total	Mostly b/c of human activity such as burning fossil fuels	Mostly b/c of natural patterns in earth's environment	(VOL.) DK/Ref	No	Mixed/some evidence	(VOL.) DK/Ref
Aug 15-25, 2014	72	46	22	3	25	1	2
Feb 27-Mar 16, 2014	61	40	18	3	35	1	3
Oct 9-13, 2013	67	44	18	4	26	2	5
Mar 13-17, 2013	69	42	23	4	27	1	4
Oct 4-7, 2012	67	42	19	6	26	1	6
Nov 9-14, 2011	63	38	18	6	28	1	8
Feb 22-Mar 1, 2011	58	36	18	5	34	2	5
Oct 13-18, 2010	59	34	18	6	32	1	8
Sep 30-Oct 4, 2009	57	36	16	6	33	2	8
April, 2008	71	47	18	6	21	3	5
January, 2007	77	47	20	10	16	1	6
August, 2006	77	47	20	10	17	1	5
July, 2006	79	50	23	6	17	1	3
June, 2006	70	41	21	8	20	1	9

**[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]
ASK FORM 2 ONLY: [N=1,001]**

Q.21AF2 From what you've read and heard, is there solid evidence that the average temperature on earth has been getting warmer over the past few decades, or not?

ASK IF EARTH IS NOT GETTING WARMER (Q.21AF2=2):

Q.21CF2 Do you think that we just don't know enough yet about whether the Earth is getting warmer or do you think it's just not happening?

Aug 15-25, 2014		Feb 27-Mar 16 2014	Oct 9-13 2013 ⁴⁹
25	NET No solid evidence (Q.21AF2)	35	26
11	Just don't know enough yet	17	12
13	Just not happening	17	13
1	Don't know/Refused (VOL.)	1	1
75	Solid evidence/Some evidence (VOL.) /Don't know (VOL.)(Q.21AF2)	65	74

NO QUESTION 22

⁴⁹ Prior to October 2013, follow-up question was not asked of those who said there was no solid evidence.

[RANDOMIZE QUESTIONS 16-18 IN BLOCKS WITH QUESTIONS Q20F1 to Q23 IN BLOCKS]

ASK ALL:

Q.23 From what you've heard or read, do scientists generally agree that the earth is getting warmer because of human activity, or do they not generally agree about this?

Aug 15-25, 2014		Oct 9-13 2013	Oct 4-7 2012	Oct- 13-18 2010	Apr 28- May 12 2009
57	Yes, scientists generally agree that the Earth is getting warmer because of human activity	54	45	44	56
37	No, scientists do not generally agree that the Earth is getting warmer because of human activity	37	43	44	35
6	Don't know/Refused (VOL.)	10	12	12	9

ASK ALL:

On another topic.

Q.24 All in all, do you favor or oppose [INSERT ITEM; RANDOMIZE]? Do you favor or oppose [NEXT ITEM]?

		Favor	Oppose	(VOL.) DK/Ref
a.	The use of animals in scientific research			
	Aug 15-25, 2014	47	50	3
	Apr 28-May 12, 2009	52	43	6

TRENDS FOR COMPARISON:

AAAS *scientists survey*

Sept 11-Oct 13, 2014

May 1-June 14, 2009

89 9 2

93 5 2

b. Building more nuclear power plants to generate electricity⁵⁰

Aug 15-25, 2014

Apr 28-May 12, 2009

45 51 4

51 42 7

TRENDS FOR COMPARISON:

AAAS *scientists survey*

Sept 11-Oct 13, 2014

May 1-June 14, 2009

65 33 2

70 27 3

c. The increased use of fracking, a drilling method that uses high-pressure water and chemicals to extract oil and natural gas from underground rock formations⁵¹

Aug 15-25, 2014

Sep 4-8, 2013

Mar 13-17, 2013

39 51 10

44 49 7

48 38 14

TREND FOR COMPARISON:

AAAS *scientists survey*

Sept 11-Oct 13, 2014

31 66 3

⁵⁰ Other Pew Research surveys have asked for views about "government policies to address America's energy supply" including opinions about "the government promoting the use of nuclear power." See "[Continued Support for Keystone XL Pipeline](#)," Sep. 26, 2013.

⁵¹ A Pew Research survey conducted Nov. 6-9, 2014 repeated this question in a three-question set. See "[Little Enthusiasm, Familiar Divisions After the GOP's Midterm Victory](#)," Q.69 on the topline.

Q.24 CONTINUED...

		<u>Favor</u>	<u>Oppose</u>	<u>(VOL.) DK/Ref</u>
d.	The increased use of genetically engineered plants to create a liquid fuel replacement for gasoline Aug 15-25, 2014	68	26	6
	TREND FOR COMPARISON: AAAS <i>scientists survey</i> Sept 11-Oct 13, 2014	78	21	2
e.	Allowing more offshore oil and gas drilling in U.S. waters ⁵² Aug 15-25, 2014	52	44	4
	TREND FOR COMPARISON: AAAS <i>scientists survey</i> Sept 11-Oct 13, 2014	32	66	2
f.	Allowing more people access to experimental drugs before clinical trials have shown the drugs to be safe and effective for that disease or condition Aug 15-25, 2014	54	43	3

ASK ALL:

Q.25 Thinking about childhood diseases, such as measles, mumps, rubella and polio... **[READ AND RANDOMIZE RESPONSE OPTIONS]**

Aug 15-25, <u>2014</u>		Apr 28-May 12, <u>2009</u> ⁵³
68	Should all children be required to be vaccinated [OR]	69
30	Should parents be able to decide NOT to vaccinate their children	28
1	Don't know/Refused (VOL.)	3

TRENDS FOR COMPARISON:

	All children should be required to be <u>vaccinated</u>	Parents should be able to decide NOT to vaccinate <u>their children</u>	<u>No answer</u>
AAAS <i>scientists survey</i> ⁵⁴ Sept 11-Oct 13, 2014	86	13	1
May 1-June 14, 2009	82	17	1

NO QUESTION 26

⁵² Other Pew Research surveys have asked for views about "government policies to address America's energy supply" including opinions about "the government allowing more offshore oil and gas drilling in U.S. waters." See "[Continued Support for Keystone XL Pipeline](#)," Sep. 26, 2013.

⁵³ Answer choices for 2009 surveys were, "The earth is getting warmer mostly because of natural changes in the atmosphere; The earth is getting warmer mostly because of human activity such as burning fossil fuels; The earth is not getting warmer."

⁵⁴ AAAS scientists question wording was "Thinking about childhood diseases, such as measles, mumps, rubella and polio, do you think...[RANDOMIZE RESPONSE OPTIONS 1 & 2: Parents should be able to decide NOT to vaccinate their children/All children should be required to be vaccinated]"

ASK ALL:

Q.27 Thinking about the use of biological engineering to create artificial organs for humans needing a transplant operation, would you say this is making appropriate use of medical advances OR is it taking medical advances too far?

Aug 15-25,	
<u>2014</u>	
74	Appropriate use of medical advances
23	Taking medical advances too far
3	Don't know/Refused (VOL.)

ASK ALL:

Q.28 Which of these statements comes closest to your point of view, even if neither is exactly right?
[READ IN ORDER]

Aug 15-25,		Mar 21-Apr 8,	Apr 6-May 6,
<u>2014</u>		<u>2013</u>	<u>1999⁵⁵</u>
38	(One) The growing world population will NOT be a major problem because we will find a way to stretch our natural resources [OR]	37	42
59	(Two) The growing population WILL be a major problem because there won't be enough food and resources to go around	61	56
--	Neither/Both equally (VOL.)	1	1
3	Don't know/Refused (VOL.)	2	1

TREND FOR COMPARISON:

	The growing world population will NOT be a major problem...	The growing world population WILL be a major problem...	No answer
AAAS <i>scientists survey</i> Sept 11-Oct 13, 2014	17	82	*

ASK ALL:

On another topic.

Q.29 Do you think the SPACE STATION has been a good investment for this country, or don't you think so?⁵⁶

Aug 15-25,	
<u>2014</u>	
64	Good investment
29	Not a good investment
7	Don't know/Refused (VOL.)

TREND FOR COMPARISON:

AAAS <i>scientists survey</i> Sept 11-Oct 13, 2014	<u>Good investment</u> 68	<u>Not a good investment</u> 31	<u>No answer</u> 2
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⁵⁵ In 1999 survey, response options one and two were randomized.

⁵⁶ For other Pew Research surveys with questions related to the U.S. space program see "[Majority Sees U.S. Leadership in Space as Essential](#)," July 5, 2011.

ASK ALL:

Q.30 The cost of sending human astronauts to space is considerably greater than the cost of using robotic machines for space exploration. As you think about the future of the U.S. space program, do you think it is essential or not essential to include the use of human astronauts in space?

Aug 15-25,
2014

59	Essential
39	Not essential
3	Don't know/Refused (VOL.)

TREND FOR COMPARISON:

AAAS <i>scientists survey</i>	<u>Essential</u>	<u>Not essential</u>	<u>No answer</u>
Sept 11-Oct 13, 2014	47	52	1

NO QUESTION 31**ASK ALL:**

Q.32 From what you've heard or read, would you say that **[READ AND RANDOMIZE 1-2]**

Aug 15-25,
2014

42	Scientists generally believe that the universe was created in a single, violent event, often called "the Big Bang"
52	Scientists are divided in their views about how the universe was created
2	Both/Neither (VOL.)
5	Don't know/Refused (VOL.)

[RANDOMIZE ORDER OF Q33 AND Q34]**ASK ALL:**

Q.33 Would you say that changing a baby's genetic characteristics to make the baby more intelligent is making appropriate use of medical advances OR is it taking medical advances too far?⁵⁷

Aug 15-25,
2014

15	Appropriate use of medical advances
83	Taking medical advances too far
2	Don't know/Refused (VOL.)

⁵⁷ A similar question was asked on the Virginia Commonwealth University Life Sciences Survey September 3-26, 2003. Question wording was, "Would you say that changing a baby's genetic characteristics for cosmetic purposes such as eye or hair color is making appropriate use of medical advances or is it taking medical advances too far?" Fully 94% of adults said this was taking medical advances too far, 4% said it was an appropriate use of medical advances, 2% volunteered don't know or gave no response. For details see "[Public Values Science But Concerned About Biotechnology](#)"

[RANDOMIZE ORDER OF Q33 AND Q34]

ASK ALL:

Q.34 Would you say that changing a baby's genetic characteristics to reduce the risk of serious diseases is making appropriate use of medical advances OR is it taking medical advances too far?

		<i>VCU Life Sciences Survey</i>	
Aug 15-25, <u>2014</u>		Sept 3-26, <u>2003</u>	
46	Appropriate use of medical advances	41	
50	Taking medical advances too far	54	
4	Don't know/Refused (VOL.)	6	

ASK ALL:

On a different topic.

Q.35 Do you think it is generally safe or unsafe to eat foods grown with pesticides?

Aug 15-25, <u>2014</u>	
28	Generally safe
69	Generally unsafe
3	Don't know/Refused (VOL.)

TREND FOR COMPARISON:

<i>AAAS scientists survey</i> Sept 11-Oct 13, 2014	<u>Generally safe</u>	<u>Generally unsafe</u>	<u>No answer</u>
	68	31	1

NO QUESTION 36

ASK ALL: Scientists can change the genes in some food crops and farm animals to make them grow faster or bigger and be more resistant to bugs, weeds, and disease.⁵⁸

ASK ALL:

Q.37 When you are food shopping, how often, if ever, do you LOOK TO SEE if the products are genetically modified? **[READ]**

Aug 15-25, <u>2014</u>	
25	Always
25	Sometimes
17	Not too often
31	Never
1	Someone else in HH does the food shopping (VOL.)
1	Don't know/Refused (VOL.)

⁵⁸ Introduction to question set from ABC News, July 2003

ASK ALL:

Q.38 Do you think it is generally safe or unsafe to eat genetically modified foods?

Aug 15-25,
2014

37	Generally safe
57	Generally UNSafe
6	Don't know/Refused (VOL.)

TREND FOR COMPARISON:

AAAS <i>scientists survey</i>	<u>Generally safe</u>	<u>Generally unsafe</u>	<u>No answer</u>
Sept 11-Oct 13, 2014	88	11	1

TRENDS FOR COMPARISON:

ABC News: Scientists can change the genes in some food crops and farm animals to make them grow faster or bigger and be more resistant to bugs, weeds, and disease. Do you think this genetically modified food, also known as bio-engineered food, is or is not safe to eat?

	<i>ABC News</i>	<i>ABC News</i>
	<i>July 2003</i>	<i>July 2001</i>
Safe	46	35
Unsafe	46	52
No opinion (VOL.)	9	13

ASK ALL:

Q.39 From what you've heard or read, would you say scientists have a clear understanding of the health effects of genetically modified crops OR are scientists NOT clear about this?

Aug 15-25,
2014

28	Scientists have a clear understanding
67	Scientists do NOT have a clear understanding
4	Don't know/Refused (VOL.)

Q40 THROUGH END HELD FOR FUTURE RELEASE⁵⁹

⁵⁹ See questionnaire for question wording on demographic background questions.

Appendix D: Topline AAAS Scientists Survey

PEW RESEARCH CENTER
2014 SURVEY OF AAAS SCIENTISTS
TOPLINE
SEPTEMBER 11 - OCTOBER 13, 2014
N=3,748

NOTE: ALL NUMBERS ARE PERCENTAGES. ANY PERCENTAGES GREATER THAN ZERO BUT LESS THAN 0.5% ARE REPLACED BY AN ASTERISK (*). COLUMNS/ROWS MAY NOT TOTAL 100% DUE TO ROUNDING.

ALL TREND COMPARISONS TO PEW RESEARCH SURVEY OF AAAS SCIENTISTS CONDUCTED MAY 1 TO JUNE 14, 2009, N=2,533

In this survey we will be asking you both about issues pertaining to science in general and to your scientific field or specialty. Most questions will be about science in general, and we will specify when we are particularly interested in your views about your specialty.

ASK ALL:

Q1 Would you say that this is generally a good time or a bad time for science?

<u>2014</u>		<u>2009</u>
52	Good time	76
48	Bad time	23
*	No answer	1

ASK ALL:

Q2 Would you say this is generally a good time or a bad time for YOUR SCIENTIFIC SPECIALTY?

<u>2014</u>		<u>2009</u>
62	Good time	73
37	Bad time	25
1	No answer	2

ASK ALL:

Q3 Compared to other industrialized countries, how would you rate the United States with regard to its overall scientific achievements?

<u>2014</u>		<u>2009</u>
45	Best in the world	49
47	Above average	45
6	Average	5
1	Below average	1
*	No answer	*

[RANDOMIZE QUESTIONS Q4a TO Q4e]**ASK ALL:****Q4a Compared with other industrialized countries, how would you rate the United States in the following area ... medical treatment?**

<u>2014</u>	
25	Best in the world
39	Above average
22	Average
13	Below average
*	No answer

ASK ALL:**Q4b Compared with other industrialized countries, how would you rate the United States in the following area ... industry research & development (R&D) innovation?**

<u>2014</u>	
29	Best in the world
53	Above average
15	Average
3	Below average
1	No answer

ASK ALL:**Q4c Compared with other industrialized countries, how would you rate the United States in the following area ... doctoral training in science and technology?**

<u>2014</u>	
46	Best in the world
41	Above average
10	Average
2	Below average
*	No answer

ASK ALL:**Q4d Compared with other industrialized countries, how would you rate the United States in the following area ... science, technology, engineering and math education for grades K to 12?**

<u>2014</u>	
1	Best in the world
15	Above average
38	Average
46	Below average
*	No answer

ASK ALL:

Q4e Compared with other industrialized countries, how would you rate the United States in the following area ... cutting-edge basic research in science and technology?

<u>2014</u>	
40	Best in the world
47	Above average
11	Average
2	Below average
1	No answer

[RANDOMIZE ITEMS Q5A TO Q5D]

ASK ALL:

Q5 How much of a problem, if at all, do you think each of the following are for science in general?

	<u>Major problem</u>	<u>Minor problem</u>	<u>Not a problem</u>	<u>No answer</u>
a. The public expects solutions to problems too quickly	49	44	7	*
Trend 2009	49	45	6	*
b. The news media oversimplify scientific findings	52	43	5	*
Trend 2009	48	45	6	*
c. News reports don't distinguish between well-founded and not well-founded scientific findings	79	20	2	*
Trend 2009	76	22	2	*
d. The public does not know very much about science	84	14	1	*
Trend 2009	85	14	1	*

[RANDOMIZE ITEMS Q6A TO Q6D]

ASK ALL:

Q6 To what extent do you think each of the following are REASONS for the U.S. public having limited knowledge about science?

	<u>Major reason</u>	<u>Minor reason</u>	<u>Not a reason</u>	<u>No answer</u>
a. Not enough science, technology, engineering and math in grades K through 12	75	22	3	*
b. Too few scientists who communicate their findings through the media and online	40	49	11	*
c. Lack of public interest and attention to science news	57	35	7	*
d. Lack of media interest and attention to scientific	43	46	12	*

developments

NO QUESTION 7

**[RANDOMIZE ITEMS A TO G WITH ITEM H 'NONE OF THESE ARE SERIOUS PROBLEMS' ALWAYS LAST]
ASK ALL:**

Q8 Which of the following, if any, are serious problems for conducting high quality scientific research today? [Check all that apply.]

	<u>Selected</u>	NET Not selected/ No answer/ <u>None of these</u>
a. The way Institutional Review Boards (IRBs) implement rules for research involving human subjects	12	88
b. Lack of funding for basic research	88	12
c. Visa and immigration problems facing foreign scientists or students who want to work or study in the U.S.	32	68
d. ITAR regulations on using American technology overseas	6	94
e. Regulations on animal research	13	87
f. Conflict of interest rules used by scientific publications	8	92
g. Not enough data replication of previous research studies	48	52

**[RANDOMIZE QUESTIONS Q9, Q10, Q11; RANDOMIZE RESPONSE OPTIONS 1 and 2 FOR Q9, Q10, Q11]
ASK ALL:**

Q9 Compared with 5 years ago, would you say getting FEDERAL funding for research in your specialty area is...

<u>2014</u>	
83	Harder today
2	Easier today
13	About the same as five years ago
2	No answer

ASK ALL:

Q10 Compared with 5 years ago, would you say getting INDUSTRY funding for research in your specialty area is...

2014

45	Harder today
9	Easier today
41	About the same as five years ago
5	No answer

ASK ALL:

Q11 Compared with 5 years ago, would you say getting PRIVATE FOUNDATION funding for research in your specialty area is...

2014

45	Harder today
8	Easier today
43	About the same as five years ago
5	No answer

[RANDOMIZE RESPONSE OPTIONS 1 AND 2]

ASK ALL:

Q12 When it comes to funding for research in your scientific specialty, which do most funders place greater emphasis on...

2014

56	Projects expected to make incremental scientific progress that have lower risk of failure
11	Projects with the potential for scientific breakthroughs, but with higher risk of failure
30	Both types of projects about equally
2	No answer

2009

59
5
28
7

[RANDOMIZE ITEMS Q13A to Q13D]**ASK ALL:**

Q13 Please indicate whether you think each of the following has too much influence, or not, on the direction of research in your scientific specialty.

	<u>Yes, too much influence</u>	<u>No, not too much influence</u>	<u>No answer</u>
a. The emphasis on developing marketable products	47	51	2
Trend 2009	40	56	4
b. A focus on projects that will yield results quickly	69	29	2
Trend 2009	66	31	3
c. The incentive to do research in areas where funding is readily available	74	23	2
Trend 2009	76	20	3
d. Political groups or officials	55	44	2
Trend 2009	50	47	3

[RANDOMIZE QUESTIONS Q14A TO Q14D]**ASK ALL:**

Q14a How often do you believe the best scientific information guides government regulations when it comes to ... food safety regulations?

<u>2014</u>	
3	Always
43	Most of the time
50	Some of the time
3	Never
1	No answer

ASK ALL:

Q14b How often do you believe the best scientific information guides government regulations when it comes to ... clean air and water regulations?

<u>2014</u>	
2	Always
26	Most of the time
66	Some of the time
6	Never
1	No answer

ASK ALL:

Q14c How often do you believe the best scientific information guides government regulations when it comes to ... new drug and medical treatment regulations?

<u>2014</u>	
4	Always
54	Most of the time
40	Some of the time
1	Never
1	No answer

ASK ALL:

Q14d How often do you believe the best scientific information guides government regulations when it comes to ... land use regulations?

<u>2014</u>	
1	Always
14	Most of the time
75	Some of the time
9	Never
1	No answer

QUESTION 15 HELD FOR FUTURE RELEASE

[RANDOMIZE Q16-Q17 BLOCK WITH Q18-Q19 BLOCK]
[DISPLAY FOR ALL WITH FIRST QUESTION IN SET:]

Next, a few questions about issues being debated by the public.

ASK ALL:

Q16 Which comes closer to your view: [RANDOMIZE RESPONSE OPTIONS: Humans and other living things have evolved over time; Humans and other living things have existed in their present form since the beginning of time]

ASK IF EVOLVED (Q16=1): Q17 Do you think that... [RANDOMIZE RESPONSE OPTIONS: Humans and over living things have evolved due to natural processes such as natural selection; A supreme being guided the evolution of living things for the purpose of creating humans and other life in the form it exists today]

<u>2014⁶⁰</u>		<u>2009</u>
98	Humans and other living things have evolved over time	97
90	Humans and other living things have evolved due to natural processes such as natural selection	87
8	A supreme being guided the evolution of living things for the purpose of creating humans and other life in the form it exists today	8
1	No answer Q17	2
2	Humans and other living things have existed in their present form since the beginning of time	2
*	No answer Q16	1

[RANDOMIZE Q16-Q17 BLOCK WITH Q18-Q19 BLOCK]

ASK ALL:

Q18 From what you've read and heard, do you think... [RANDOMIZE RESPONSE OPTIONS 1 AND 2]:

<u>2014</u>		<u>2009⁶¹</u>
9	The earth is getting warmer mostly because of natural patterns in the earth's environment	10
87	The earth is getting warmer mostly because of human activity such as burning fossil fuels	84
3	There is no solid evidence that the earth is getting warmer	4
1	No answer	2

⁶⁰ The nested Q17 responses do not sum to the net of 98% on Q16 due to rounding.

⁶¹In the 2009 survey, one of the response options was worded differently. It read, "the earth is getting warmer mostly because of natural changes in the atmosphere."

[RANDOMIZE Q16-Q17 BLOCK WITH Q18-Q19 BLOCK]

ASK ALL:

Q19 In your view, how serious a problem is climate change? Is it a...

<u>2014</u>		<u>2009⁶²</u>
77	Very serious problem	70
17	Somewhat serious problem	22
4	Not too serious a problem	4
2	Not a problem	2
*	No answer	*

NO QUESTIONS 20 THROUGH 21

[RANDOMIZE QUESTIONS Q22A THROUGH Q22E]

ASK ALL:

Q22a Do you favor or oppose the use of animals in scientific research?

<u>2014</u>		<u>2009</u>
89	Favor	93
9	Oppose	5
2	No answer	2

ASK ALL:

Q22b Do you favor or oppose building more nuclear power plants to generate electricity?

<u>2014</u>		<u>2009</u>
65	Favor	70
33	Oppose	27
2	No answer	3

ASK ALL:

Q22c Do you favor or oppose the increased use of fracking, a drilling method that uses high-pressure water and chemicals to extract oil and natural gas from underground rock formations?

<u>2014</u>	
31	Favor
66	Oppose
3	No answer

⁶² In the 2009 survey, the question stem asked, "In your view, how serious a problem is global warming..."

ASK ALL:

Q22d Do you favor or oppose the increased use of genetically engineered plants to create a liquid fuel replacement for gasoline?

<u>2014</u>	
78	Favor
21	Oppose
2	No answer

ASK ALL:

Q22e Do you favor or oppose allowing more offshore oil and gas drilling in U.S. waters?

<u>2014</u>	
32	Favor
66	Oppose
2	No answer

ASK ALL:

**Q23 Thinking about childhood diseases, such as measles, mumps, rubella and polio, do you think...
[RANDOMIZE RESPONSE OPTIONS]**

<u>2014</u>		<u>2009</u>
13	Parents should be able to decide NOT to vaccinate their children	17
86	All children should be required to be vaccinated	82
1	No answer	1

ASK ALL:

Q24 Which of these statements comes closest to your point of view, even if neither is exactly right?

<u>2014</u>	
17	The growing world population will NOT be a major problem because we will find a way to stretch our natural resources
82	The growing population WILL be a major problem because there won't be enough food and resources to go around
*	No answer

ASK ALL:

Q25 Do you think the space station has been a good investment for this country, or don't you think so?

2014

68	Good investment
31	Not a good investment
2	No answer

ASK ALL:

Q26 The cost of sending human astronauts to space is considerably greater than the cost of using robotic machines for space exploration. As you think about the future of the U.S. space program, do you think it is essential or not essential to include the use of human astronauts in space?

2014

47	Essential
52	Not essential
1	No answer

ASK ALL:

Q27 Do you think it is generally safe or unsafe to eat foods grown with pesticides?

2014

68	Generally safe
31	Generally unsafe
1	No answer

ASK ALL:

Q28 Do you think it is generally safe or unsafe to eat genetically modified foods?

2014

88	Generally safe
11	Generally unsafe
1	No answer

Q29 THROUGH Q32 HELD FOR FUTURE RELEASE

NO QUESTION 33

[DISPLAY FOR ALL:]

A few questions about science as a career...

ASK ALL:

Q34 Overall, how would you characterize this as a time to begin a career in your scientific specialty area? Would you say it is a...

<u>2014</u>		<u>2009</u>
15	Very good time	17
44	Good time	50
33	Bad time	27
7	Very bad time	5
1	No answer	1

ASK ALL:

Q35 Compared with five years ago, would you say attracting the best young people to a science career is...

<u>2014</u>	
9	Easier today
58	Harder today
32	About the same as five years ago
1	No answer

[RANDOMIZE ITEMS A TO F WITH ITEM G 'NONE OF THESE ARE SERIOUS PROBLEMS FOR PEOPLE ENTERING A CAREER AS A RESEARCH SCIENTIST THESE DAYS' ALWAYS LAST]

ASK ALL:

Q36 Which of the following, if any, are serious problems for people entering a career as a research scientist these days? [Check all that apply.]

	<u>Selected</u>	NET Not selected/ No answer/ <u>None of these</u>
a. Lack of adequate funding for research needs	85	15
b. Salaries below market competition	50	50
c. Too few job openings for tenure-track positions	73	27
d. Graduate training that doesn't meet today's needs	31	69
e. The long hours needed to succeed in a research career	46	54
f. Too few job openings in industry research & development (R&D) positions	54	46

Q37 THROUGH Q38 HELD FOR FUTURE RELEASE

ASK ALL:

Q39 Thinking about any scientific research that you have been involved with during the past five years, do you think of your work as **PRIMARILY** addressing... [RANDOMIZE RESPONSE OPTIONS]

<u>2014</u>		<u>2009</u>
48	Basic knowledge questions	49
50	Applied research questions	46
2	No answer	5

NO QUESTION 40

ASK ALL:

Q41 What were the one or two most significant experiences influencing your decision to become a scientist? *[Please type your response in the box.]*

OPEN END RESPONSES CATEGORIZED AS FOLLOWS; MULTIPLE RESPONSES ALLOWED

2014

- 30 Intellectually challenging, lifelong curiosity, love of science or nature
- 8 To make a difference, contribute to society, help others, teach
- 4 Ability to do well, good at it

- 24 Mentors, Professors, Teachers (at any level)
- 6 High school or middle school courses, science magnet school
- 6 Other influential courses or teaching experience when it “clicked”

- 13 Lab experience, fieldwork, internships, science fairs
- 8 Other personal experiences in jobs, including some leading to new direction
- 8 Childhood experiences with natural parks, science museums, star gazing, chemistry sets

- 12 Family encouragement or inspiration
- 1 Kindred spirit with scientists/students

- 7 Influence of books, movies, TV on science e.g., Cosmos/Sagan, biographies of scientists, and science fiction
- 1 Influence of specific scientists either through personal experience or admired e.g., Curie, Goodall, Einstein, Ehrlich, Salk, Feynman

- 4 The space race, NASA, International Space programs
- 1 Other scientific discoveries e.g. Human Genome Project, Manhattan Project, Cloning, Gene Therapy
- * Environmental issues of the 1970s

- 4 Practical issues: funding, job availability

- 13 No answer

ASK ALL:**Q42 What is your primary field or scientific discipline?**

<u>2014</u>		TREND FOR COMPARISON	<u>2009</u> ⁶³
50	Agriculture, Biological & Medical Sciences	Biological & Medical	51
11	Chemistry	Chemistry	14
7	Earth Sciences	Geosciences	6
7	Engineering	Engineering	6
5	Mathematics & Computer science	Math & Computer science	3
8	Physics & Astronomy	Physics & Astronomy	8
9	Social & Behavioral Sciences	Social Sciences & Policy	7
4	Other [please specify]	Other	3
*	No answer	No answer	2

ASK IF Q42=1-7:**Q43 Within the field or discipline of [INSERT Q42=1-7 CATEGORY], what is your primary scientific specialty area? LIST OF OPTIONS WITH OTHER SPECIFY FOR EACH CATEGORY NOT SHOWN****ASK IF Q42=8:****Q43b Within that field or discipline, what is your primary scientific specialty area? [Please type your response in the box.] [OPEN END]****RESPONSES TO Q43 NOT SHOWN****ASK ALL:****Q44 Would you describe your own work in your primary specialty area as CLINICAL OR TRANSLATIONAL research, or not?**

<u>2014</u>		TREND FOR COMPARISON	<u>2009</u> ⁶⁴
27	Yes		11
71	No		88
2	No answer		1

ASK ALL:**Q45 Would you describe your own work in your primary scientific specialty area as INTERDISCIPLINARY, or not?**

<u>2014</u>		<u>2009</u>
82	Yes	81
17	No	18
1	No answer	1

⁶³ In the 2009 survey, primary field or scientific discipline was categorized based on open-end responses and may not be directly comparable to 2014.

⁶⁴ In the 2009 survey, the question stem did not include translational research. It asked, "would you describe your own work in your primary specialty area as clinical research, or not?"

[RANDOMIZE ITEMS A TO E WITH ITEM F 'NONE OF THESE' ALWAYS LAST]

ASK ALL:

Q46 Which, if any, of the following have you done? *[Check all that apply.]*

	<u>Selected</u>	NET Not selected/ No answer/ <u>None of these</u>
a. Completed graduate or postdoctoral training in TWO or more primary fields	30	70
b. Published a research study with a multidisciplinary team	57	43
c. Read a scientific journal article in fields outside of your primary specialty area in the past 12 months	92	8
d. Taught a course that drew material from TWO or more primary fields	47	53
e. Held a university research position in TWO or more disciplines	20	80

Q47 THROUGH Q51 HELD FOR FUTURE RELEASE

NO QUESTIONS 52 THROUGH 54

ASK ALL:

Q55 Within the last five years, have you worked on a research project that used animals?

<u>2014</u>		<u>2009</u>
32	Yes	35
67	No	64
1	No answer	1

ASK ALL:

Q56 Within the last five years, have you worked on a research project that used human subjects?

<u>2014</u>		<u>2009</u>
29	Yes	24
70	No	74
1	No answer	2

ASK ALL:**Q57** Within the last five years, have you received any funding for a research project?

<u>2014</u>	
56	Yes
43	No
1	No answer

ASK IF YES, RECEIVED FUNDING WITH PAST 5 YEARS (Q57=1)**ITEMS IN ORDER WITH ITEM G 'NONE OF THESE' LAST****Q58** From which of the following sources did you receive research funding within the last five years?
*[Check all that apply.]***BASED ON THOSE WHO RECEIVED FUNDING WITHIN LAST FIVE YEARS N=2,077**

	<u>Selected</u>	NET Not selected/ No answer/ <u>None of these</u>
a. Federal government	78	22
b. State government	15	85
c. Private foundations (non-profit)	32	68
d. Industry	25	75
e. Direct support from a university or college	46	54
f. Scientific professional association	6	94

ASK ALL:**E1** Are you currently retired, or not?

<u>2014</u>		<u>2009</u>	
23	Yes, retired	19	
76	No, not retired	79	
1	No answer	1	

ASK ALL:**E2** Are you now enrolled in school, either full or part-time, or not?

<u>2014</u>		<u>2009</u>	
13	Yes, full-time student	14	
3	Yes, part-time	2	
83	Not enrolled in school	83	
1	No answer	1	

ASK ALL:

E3 Are you now employed full-time, part-time or not employed?

<u>2014</u>		<u>2009</u>
62	Full-time	71
12	Part-time	10
25	Not employed	17
1	No answer	1

ASK IF EMPLOYED FULL OR PART-TIME (E3=1,2):

EMPORG. Which of these best describes your current employer?

BASED ON EMPLOYED FULL OR PART-TIME N=2,753

<u>2014</u>		<u>2009</u>
10	Government	9
58	University or college	63
21	Business or industry	15
9	Non-profit organization	8
2	Other (please specify)	5
*	No answer	*

ASK ALL:

EDUC For each of the following, indicate if you currently hold this degree: [Check all that apply.]
Response options a. Master's Degree b. Doctor of Philosophy c. Doctor of Medicine d. Doctor of Dentistry e. Other advanced degree (s) (please specify)

<u>2014</u>	HIGHEST DEGREE OBTAINED
72	Doctorate or medical-related doctorate
16	Master's degree
12	All others: includes those with B.S., degrees in progress, and unclear responses

ASK ALL:

AGE What is your age? OPEN-END

<u>2014</u>		<u>2009</u>
35	18 to 49 years	38
29	50 to 64 years	33
35	65 and older	26
2	No answer	3
55	Mean age	53
59	Median age	55

ASK ALL:**RSEX** Are you male or female?

<u>2014</u>		<u>2009</u>
71	Male	72
29	Female	26
*	No answer	2

ASK ALL:**RACE1** What is your race or origin? Select as many as apply. [Check all that apply.]

Response options: White; Hispanic, Latino or Spanish origin; Black or African American; Asian or Asian-American; American Indian or Alaska Native; Native Hawaiian or Other Pacific Islander; Some other race or origin (please specify)

<u>2014</u>	SUMMARY OF RACE, ETHNICITY
83	White, non-Hispanic ⁶⁵
1	African American, non-Hispanic
4	Hispanic
7	Asian or Asian-American, non-Hispanic
2	Other, Mixed, non-Hispanic
3	No answer/Refused

ASK ALL:**USBORN.** Were you born in the United States, in Puerto Rico or another U.S. territory, or in another country?

<u>2014</u>	
83	Born in the U.S. ⁶⁶
1	Born in Puerto Rico or a U.S. territory
16	Born in another country
*	No answer

⁶⁵ For comparison, a similar question on the 2009 survey found 81% of AAAS scientists were non-Hispanic whites.

⁶⁶ For comparison, a similar question on the 2009 survey found 81% of AAAS scientists were born in the U.S., 18% said they were not born in the U.S. Nine-in-ten were either born in the U.S. or naturalized citizens.

ASK IF USBORN=3 OR SKIP:

WHEREBORN. In what country were you born? *Response options with other specify not shown*

BASED ON THOSE BORN OUTSIDE THE U.S. N=604

2014

36	Europe (including Eastern Europe)
32	Asia & Pacific (including Australia and New Zealand)
14	South America & Caribbean (including Puerto Rico or U.S. territory)
7	Canada
3	Middle East and North Africa
2	Sub-saharan Africa
6	Other unclear/No answer

ASK IF USBORN=3 OR SKIP:

CITIZEN Are you a citizen of the United States?

Response options: Yes; No.

BASED ON TOTAL

2014

92	NET Citizen or Born in U.S
83	U.S. born
9	Citizen, foreign born
1	Born in Puerto Rico or U.S. territory
7	Foreign born, not a U.S. Citizen
1	No answer

OTHER BACKGROUND QUESTIONS THROUGH END HELD FOR FUTURE RELEASE