

Wrestling with Public Input on an Ethical Analysis of Scientific Research

BY DAPHNE OLUWASEUN MARTSCHENKO, SHAWNEEQUA L. CALLIER,
NANIBAA' A. GARRISON, SANDRA SOO-JIN LEE, PATRICK TURLEY,
MICHELLE N. MEYER, AND ERIK PARENS

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Appendix A.
CSB Recruitment Materials

WRESTLING WITH SOCIAL AND
BEHAVIORAL GENOMICS

SOUNDING BOARD



RAISE YOUR VOICE TO
POSITIVELY IMPACT SCIENCE!

We are in search of individuals open to having honest conversations about the risks and potential benefits of a new area of DNA research: social and behavioral genomics.

Learn about a new field of scientific research and help shape how it is conducted and communicated!



THIS IS A PAID OPPORTUNITY

TO LEARN MORE AND APPLY GO TO:
[HTTPS://FORMS.GLE/277IPJQYVFWP3K8B9](https://forms.gle/277IPJQYVFWP3K8B9)



Appendix B. CSB Application

Wrestling with Social & Behavioral Genomics Sounding Board

Thank you for your interest in becoming a Hastings Center & Geisinger 'Wrestling with Social & Behavioral Genomics' Sounding Board member.

We are a diverse working group of academics interested in gathering community perspectives on the risks and potential benefits of an emerging field of research: social and behavioral genomics. We are looking for individuals who are interested in working with us to think about how to conduct and responsibly communicate this area of DNA research. We will explain how and why scientists use genetics to study intelligence, depression, addiction, and income and ask for your opinions and reactions. We will pay Sounding Board members \$1200 for giving us their enthusiastic participation for approximately 2.5 hours per month, over the course of 18 months. Our Sounding Board will be a small group of 10-12 people.

Before you complete the application, please take a few moments to read the following overview. You can come back to this page at any point:

1. What are social and behavioral genomics?

Researchers now use genetics to study topics like depression or how many years of schooling one completes. Using a small amount of blood or saliva, researchers can generate something called a 'polygenic score.' When studying a specific topic, like years of schooling, researchers use polygenic scores to collect and combine the many areas in people's DNA that have been linked to education. Polygenic scores could be used in research to make it easier to learn about how genes, family, and other factors influence people's lives. These scores could also be used to inform how health care, educational, or other resources are given to people.

2. What is a Sounding Board?

Given that the work we are doing could have an impact on many different kinds of people, we need to gain insights from many different perspectives. A Sounding Board is just that – a collection of individuals who have different perspectives, do not know much about social and behavioral genomics, and have an interest in sharing their thoughts with us.

3. What is the role of a Sounding Board member?

- Tell us what concerns or excites you about social and behavioral genomics
- Talk with us about how communities influence your thinking
- Talk with us about how cultural beliefs influence your thinking
- Ask questions
- Create a safe space for voicing opinions and giving/receiving feedback
- Be open to learning about issues you may know little about
- Tell us what you need to feel informed!

4. Who can become a Sounding Board member?

Anyone! We especially welcome those who do not know very much about social and behavioral genomics and who are not working as professors or researchers.

If you are still interested, please share your email below: _____

1. Email *

Background
information

The following section asks basic demographic information to help us learn more about you.

2. What is your name?

3. In which age group are you?

Mark only one oval.

- ☐ 18 to 25 years old
- ☐ 26 to 35 years old
- ☐ 36 to 45 years old
- ☐ 46 to 55 years old
- ☐ 56 to 65 years old
- ☐ 66 to 75 years old
- ☐ 76 to 85 years old
- ☐ 86 to 95 years old
- ☐ 96 years and older

4. What kind of environment do you live in?

Mark only one oval.

- ☐ Rural
- ☐ Urban
- ☐ Suburban
- ☐ Other

5. Briefly tell us about how you spend your time or make a living. For instance, what jobs in and/or outside the home do you hold or have held? If you are a student what do you study?

6. Which categories describe you? Note, you may select more than one group.

Check all that apply.

- ☐ American Indian or Alaska Native (For example: Aztec, Blackfeet Tribe, Mayan, Navajo Nation, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.)
- ☐ Asian (For example: Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, etc.)
- ☐ Black, African American, or African (For example: African American, Ethiopian, Haitian, Jamaican, Nigerian, Somali, etc.)
- ☐ Hispanic, Latino, or Spanish (For example: Columbian, Cuban, Dominican, Mexican or Mexican American, Puerto Rican, Salvadoran, etc.)
- ☐ Middle Eastern or North African (For example: Algerian, Egyptian, Iranian, Lebanese, Moroccan, Syrian, etc.)
- ☐ Native Hawaiian or other Pacific Islander (For example: Chamorro, Fijian, Marshallese, Native Hawaiian, Tongan, etc.)
- ☐ White (For example: English, European, French, German, Irish, Italian, Polish, etc.)
- ☐ None of these fully describe me (if you want, describe a different category below in 'Other')
- ☐ Prefer not to answer
- ☐ Other: _____

7. What term best expresses how you describe your gender identity?

Mark only one oval.

- ☐ Man
- ☐ Woman
- ☐ Non-binary
- ☐ Transgender
- ☐ None of these describe me
- ☐ Prefer not to answer

8. Which term best represents how you think of your sexual orientation?

Mark only one oval.

- ☐ Gay
- ☐ Lesbian
- ☐ Straight (that is, not gay or lesbian)
- ☐ Bisexual
- ☐ None of these describe me
- ☐ Prefer not to answer

9. What is the highest grade or year of school you completed?

Mark only one oval.

- ☐ Never attended school or only attended kindergarten
- ☐ Grades 1 through 4 (primary school)
- ☐ Grades 5 through 8 (middle school)
- ☐ Grades 9 through 11 (some high school)
- ☐ Grade 12 or GED (high school graduate)
- ☐ 1 to 3 years after high school (Some college, Associate's degree, or technical school)
- ☐ College for 4 years or more (College graduate)
- ☐ Advanced degree (Master's, Doctorate, etc.)
- ☐ Prefer not to answer

10. What is your annual household income from all sources?

Mark only one oval.

- ☐ Less than \$10,000
- ☐ \$10,000-\$24,999
- ☐ \$25,000-\$34,999
- ☐ \$35,000-\$49,999
- ☐ \$50,000-\$74,999
- ☐ \$75,000-\$99,999
- ☐ \$100,000-\$149,999
- ☐ \$150,000-\$199,999
- ☐ \$200,000 or more
- ☐ Prefer not to answer

11. Where do you tend to stand on social issues?

Mark only one oval.

- ☐ Very Liberal
- ☐ Liberal
- ☐ Moderate
- ☐ Conservative
- ☐ Very Conservative
- ☐ Prefer not to answer

12. Where do you tend to stand on economic issues?

Mark only one oval.

- ☐ Very Liberal
- ☐ Liberal
- ☐ Moderate
- ☐ Conservative
- ☐ Very Conservative
- ☐ Prefer not to answer

13. How religious would you consider yourself to be?

Mark only one oval.

- ☐ Not at all religious
- ☐ Not very religious
- ☐ Somewhat religious
- ☐ Pretty religious
- ☐ Very religious

14. Please select the option that you most strongly identify with

Mark only one oval.

- ☐ Agnostic
- ☐ Atheist
- ☐ Buddhist
- ☐ Chinese traditional
- ☐ Christian- Catholic
- ☐ Christian- Eastern Orthodox
- ☐ Christian- Protestant
- ☐ Hindu
- ☐ Jewish
- ☐ Muslim
- ☐ Sikh
- ☐ Other: _____

15. If you selected Protestant, which denomination do you most closely identify with?

**Sounding
Board**

The following section provides information and asks questions about the sounding board.

16. Do you know anything about social and behavioral genomics?

Mark only one oval.

- ☐ Have never heard of it until now
- ☐ I know a little (e.g., heard something on the radio or read about it in the newspaper)
- ☐ I am an expert!

These are general expectations of sounding board members

General Expectations

Over the course of 18 months:

- Participate in an educational session to learn basic concepts critical to your participation (e.g., PGS) and to tell us what more you need to know to be able to fully engage
- Participate in four 90-minute video conferences, plus any associated preparation and provide feedback on issues under discussion.
- Engage in additional ad hoc consultations via email or video
- Give critical feedback to the working group members by sharing perspectives on acceptable and unacceptable reasons for engaging in social and behavioral genomics
- Suggest strategies to address ethical aspects of social and behavioral genomics by sharing perspectives on how their communities might consume and interpret the research
- Suggest strategies for effective, and more accessible, communication of research findings

17. Are you able to commit to the above expectations?

Mark only one oval.

☐ Yes

☐ No

18. How could you join and participate in our online meetings (e.g., a Zoom meeting)?

Check the ones that apply.

Check all that apply.

☐ Computer with a camera

☐ Computer, but without a camera

☐ Smartphone with a camera.

☐ Smartphone, but without a camera.

☐ Call in by phone.

☐ Other: _____

19. Are you a current member of any other sounding board, a community advisory board, or something similar?

Mark only one oval.

☐ Yes

☐ No

20. Do you have any special needs or additional learning support requirements?

Mark only one oval.

☐ Yes

☐ No

21. Why do you want to join this sounding board?

22. Knowing what you know now, what questions do you have about social and behavioral genomics?

23. How did you find out about us?

Appendix C. CSB Survey Items

Statements about SBG Research and Its Applications

This survey is anonymous and cannot be connected to you. We encourage you to share your honest opinions. Please do not share the link with anyone. Please only take the survey once.

We are asking you to take this survey because we want to compare the responses from this survey to a similar survey that our Working Group members are also taking. We will discuss the results at our next Sounding Board meeting and spend time answering your questions.

This survey asks you to share how much you agree or Disagree with several statements. You can select options that range from “Strongly Disagree” to “Strongly Agree.” For each question, you have the option to add **“additional comments.”** You can share whatever you like in the “additional comments” sections. For example, you could share if something confused you or if there is anything that might change your opinion about the statement. We think the survey should take about 20 minutes, but it will depend on whether or not you make any additional comments.

In the survey, you will have the option to select “neither agree nor Disagree.” Think carefully about whether you want to select “neither agree or Disagree” or whether you want to select “no opinion.” These two options are slightly different from each other. Imagine the statement you were asked was: “Cantaloupe is a great fruit.” If you had never tasted cantaloupe, “no opinion” might be a better choice than “neither agree nor Disagree” because you feel like you cannot answer the question with the information you have. You might also choose “no opinion” if you feel like you do not understand what the statement is saying.

1. Social and behavioral genomics research poses risks to society. Strongly Disagree

- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q1_free1 IF SELECT ONE OF AGREE OPTIONS: You selected that you agree, at least to some extent, that social and behavioral genomics research poses risks to society. Which risks are you most concerned about?

q1_free2 ALL ELSE: Additional thoughts on statement 1:

2. Social and behavioral genomics researchers have a responsibility to try and limit the potential risks of their work.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q2_free Additional thoughts on statement 2:

3. Social/behavioral genomics research has some risks. This means that social/behavioral genomics researchers have an ethical duty to be more confident about their findings than researchers in other fields before making their findings public.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q3_free Additional thoughts on statement 3:

4. Social/behavioral genomics research can lead to better policies and practices.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q4_free IF AGREE: Why do you think social/behavioral genomics research can lead to better policies and practices? What kinds of policies and practices do you have in mind?

q4_free IF DISAGREE: Why don't you think social/behavioral genomics research can lead to better policies and practices?

5. A significant risk of social and behavioral genomics research is that it could be used to say that biology can explain why different racial groups have different outcomes.

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q5_free Additional thoughts on statement 6:

6. Polygenic scores should benefit everyone, regardless of background, equally.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q6_free Additional thoughts on statement 7:

7. Today, polygenic scores do not benefit everyone from different backgrounds equally. Researchers are trying to change this, but in the meantime, we should still make polygenic scores available to those who might benefit.

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q7_free Additional thoughts on statement 7:

8. Social and behavioral genomics research that compares different ancestral groups of people (for instance, people whose recent ancestors were from Africa and people whose recent ancestors were from Europe) with

each other is more concerning than research that compares individuals *within* the same group (for instance, comparing people whose recent ancestors were from Europe to one another).

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q8_free Additional thoughts on statement 8:

9. Both genes and environment are important reasons why people differ in their behavioral and social outcomes (for instance, how far they go in school)

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q9_free Additional thoughts on statement 11:

10. The fact that genes matter for a behavior, or a social outcome does not mean that the behavior or social outcome is destiny. For instance, someone with genes that make them likely to have poor eyesight can still have 20/20 vision with the help of eyeglasses.

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q10_free Additional thoughts on statement 12:

11. There are lots of social and behavioral traits and outcomes. It is more ethically concerning to study and develop “scores” for some of these than for others.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q11_free1 IF SELECT ONE OF AGREE OPTIONS: You answered that you think it is ethically concerning for genomics researchers to study and develop “scores” for some behaviors and social outcomes than others. What behaviors and social outcomes are you most worried about researchers studying?

q11_free ALL ELSE: Additional thoughts on statement 13:

12. Before polygenic scores are used in the real world, we need to carefully think about the risks and benefits. We need to ensure that the positives (benefits) outweigh the negatives (risks).

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q12_free Additional thoughts on statement 14:

13. Some people think that it is more ethically concerning to study and create “scores” for social and behavioral traits than for medical traits. But almost all health conditions—like cancer and heart disease—are affected by behavior and culture and so they are also social/behavioral traits. So, these traits are BOTH medical AND social/behavioral. Also, genetic information about medical traits can be stigmatizing or lead to discrimination—for instance, people with a high genetic risk for breast cancer can feel like they have “bad genes”, and they can

be denied life insurance or charged higher premiums. Therefore, in deciding which traits it is ethical to study, the distinction between medical and social/behavioral traits is not very helpful.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly Agree
- ☐ No Opinion

14. It would be wrong to give someone their polygenic score for a behavior or social outcome when there is no treatment for it or no way to address it.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q14_free Additional thoughts on statement 20:

15. Doctors use “risk calculators” to decide which patients are at higher risk for conditions like diabetes and high blood pressure. Doctors can then recommend earlier or more frequent tests for these patients. It is possible to include social or behavioral polygenic scores—like one for years of education—into these risk calculators, along with other risk factors. **Even if including social or behavioral polygenic scores would more accurately predict health outcomes like compared to not including them, it would NOT be ethical for doctors to use them.**

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q15_free Additional thoughts on statements 22:

16. In vitro fertilization (IVF) is a way to have babies by combining eggs and sperm in a medical laboratory. IVF usually produces several embryos, but only one can be placed in a woman's womb to create a pregnancy. It

would NOT be ethical to use polygenic scores to pick the embryo that is most likely to have certain social or behavioral traits.

- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Somewhat Disagree
 - ☐ Neither agree nor Disagree
 - ☐ Somewhat agree
 - ☐ Agree
 - ☐ Strongly agree
 - ☐ No opinion
-

q16_free Additional thoughts on statements 21:

17. Some people have proposed different ways of using social or behavioral polygenic scores in education. For instance, children can get free services to help them with ADHD based on a school evaluation that considers many factors. Even if including social or behavioral polygenic scores—like one for years of education or for

ADHD itself—could more accurately predict students that could most benefit from these services, society should NOT use social or behavioral polygenic scores this way.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q17_free Additional thoughts on statements 23a-b:

18. Studying the genomics of social and behavioral traits—like years of education, income, personality, addiction, or mental illness—is more ethically concerning than studying the genomics of medical traits like kidney cancer.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q18_free Additional thoughts on statement 27:

19. Research addressing some scientific questions is too socially risky for public funders to fund.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q19_free Additional thoughts on statement 31:

20. Research addressing some scientific questions is too socially risky for the media to report the results.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q20_free Additional thoughts on statement 37:

21. Some scientific questions are too socially risky for researchers to try to answer.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q21_free Additional thoughts on statement 36:

22. Researchers should only conduct social and behavioral genomics research if they see specific benefits that could come from it. They should not conduct research just out of curiosity or just to better understand the world.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q22_free Additional thoughts on statement 32:

23. The potential benefits of social and behavioral genomics research are NOT worth the risks.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q23_free Additional thoughts on statement 43:

24. Industry uses of social and behavioral genomics research are concerning because industry is driven by profit and does not have as much regulation. For example, social and behavioral genomics research could be used to create products that won't be equally accessible to everyone, or it could be used to drive profits.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q24_free Additional thoughts on statement 46:

25. A significant risk of social and behavioral genomics research is that polygenic scores are not very predictive for individuals, but industry is returning polygenic scores to people anyway.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither agree nor Disagree
- ☐ Somewhat agree
- ☐ Agree
- ☐ Strongly agree
- ☐ No opinion

q25_free Additional thoughts on statement 47:

Appendix D. CSB Survey Results

	Survey Question	Average SB response	Average WG response	Difference Between Groups
1	A significant risk of social and behavioral genomics research is that polygenic scores are not very predictive for individuals but industry is returning polygenic scores to people anyway.	1.4	1.4	0.0
2	The potential benefits of social and behavioral genomics research are NOT worth the risks.	-1.5	-1.6	0.0
3	Social/behavioral genomics research can lead to better policies and practices.	1.5	1.5	0.0
4	Before polygenic scores are used in the real world, we need to carefully think about the risks and benefits. We need to ensure that the positives (benefits) outweigh the negatives (risks).	2.4	2.4	0.0
5	Industry uses of social and behavioral genomics research are concerning because industry is driven by profit and does not have as much regulation. For example, social and behavioral genomics research could be used to create products that won't be equally accessible to everyone or it could be used to drive profits.	2.0	2.1	-0.1
6	In vitro fertilization (IVF) is a way to have babies by combining eggs and sperm in a medical laboratory. IVF usually produces several embryos. It would NOT be ethical to use polygenic scores to pick which embryos that is most likely to have certain social or behavioral traits.	1.1	0.9	0.2
7	Some people have proposed different ways of using social or behavioral polygenic scores in education. For instance, children can get free services to help them with ADHD based on a school evaluation that considers many factors. Even if including social or behavioral polygenic scores—like one for years of education or for ADHD itself—could more accurately predict students that could most benefit from these services, society should NOT use social or behavioral polygenic scores this way.	0.3	0.5	-0.3
8	The fact that genes matter for a behavior or a social outcome does not mean that the behavior or social outcome is destiny. For instance, someone with genes that make them likely to have poor eyesight can still have 20/20 vision with the help of eyeglasses.	2.4	2.6	-0.3
9	Social/behavioral genomics research has risks. This means that social/behavioral genomics researchers have an ethical duty to be more confident about their findings than researchers in other fields before making their findings public.	1.5	1.8	-0.3
#	Polygenic scores should benefit everyone, regardless of background, equally.	2.2	2.5	-0.3
#	Social and behavioral genomics researchers have a responsibility to try and limit the potential risks of their work.	2.7	2.3	0.4
#	Some people think that it is more ethically concerning to study and create "scores" for social and behavioral traits than for medical traits. But almost all health conditions—like cancer and heart disease—are affected by behavior and culture and so they are also social/behavioral traits. Therefore, in deciding which traits it is ethical to study, the distinction between medical and social/behavioral traits is not very helpful.	-0.2	0.3	-0.5
#	Researchers should only conduct social and behavioral genomics research if they see specific benefits that could come from it. They should not conduct research just out of curiosity or just to better understand the world.	-0.5	-1.0	0.5
#	Some scientific questions are too socially risky for researchers to try to answer.	0.2	-0.4	0.6
#	Social and behavioral genomics research that compares different ancestral groups of people (for instance, people whose recent ancestors were from Africa and people whose recent ancestors were from Europe) with each other is more concerning than research that compares individuals <i>within</i> the same group (for instance, comparing people whose recent ancestors were from Europe to one another).	1.6	2.3	-0.7
#	Both genes and environment are important reasons why people differ in their behavioral and social outcomes (for instance, how far they go in school)	1.6	2.3	-0.7
#	Studying the genomics of social and behavioral traits—like years of education, income, personality, addiction, or mental illness—is more ethically concerning than studying the genomics of medical traits like kidney cancer.	1.0	2.1	-1.1
#	Research addressing some scientific questions is too socially risky for public funders to fund.	0.5	-0.7	1.2
#	It would be wrong to give someone their polygenic score for a behavior or social outcome when there is no treatment for it or no way to address it.	0.2	-1.1	1.2
#	There are lots of social and behavioral traits and outcomes. It is more ethically concerning to study and develop "scores" for some of these than for others.	0.4	1.8	-1.4
#	Social and behavioral genomics research poses risks to society.	1.0	2.5	-1.4
#	A significant risk of social and behavioral genomics research is that it could be used to say that biology can explain why different racial groups have different outcomes.	1.0	2.5	-1.4
#	Research addressing some scientific questions is too socially risky for the media to report the results.	0.5	-1.1	1.5
#	Doctors use "risk calculators" to decide which patients are at higher risk for conditions like diabetes and high blood pressure. Doctors can then recommend earlier or more frequent tests for these patients. It is possible to include social or behavioral polygenic scores—like one for years of education—into these risk calculators, along with other risk factors. Even if including social or behavioral polygenic scores would more accurately predict health outcomes, it would NOT be ethical for doctors to use them.	0.2	-1.7	1.9
#	Today, polygenic scores do not benefit everyone from different backgrounds equally. Researchers are trying to change this, but in the meantime, we should still make polygenic scores available to those who might benefit.	Question 7 in sounding board survey did not have a corresponding working group survey question, hence no comparison is possible		

number	response
3	strongly agree
2	agree
1	somewhat agree
0	neither agree nor disagree
-1	somewhat disagree
-2	disagree
-3	strongly disagree

* to help the above make sense: a value of 1.4 means it is slightly more than 'somewhat agree'

☐ Questions are ordered from greatest agreement between CSG and AWG responses to least agreement.

- ☐ If value in 'difference' column is positive, it means the CSB agrees with the statement more than the AWG agrees with the statement.
- ☐ If value in 'difference' column is negative, it means the AWG agrees more with the statement than the CSB agrees with the statement.
- ☐ 'No opinion' answers have been removed from analysis.