

All of Us Streamline User Testing Report

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Test Overview

Palladian Partners conducted two remote, moderated first-click tests of mock-ups of the AllofUs.nih.gov website between October 8 and 16, 2019. One test included seven participants in the *Prospective Participant* (PP) audience segment, and the other included seven participants in the *Prospective Researcher* (PR) segment. Located throughout the United States, the participants connected to the test moderator using Webex videoconferencing that allowed moderators to view participants' clicks during the test.

Test Method

- The tests both used **learning tasks** to identify what information users unfamiliar with the *All of Us* Research Program would seek on the website and to determine whether any language or navigation features used on the website were confusing to users. For navigation labels, users were asked what they would expect to find after clicking on a label. After viewing a page, users were asked to identify where they would click to find out more.
- Additionally, **open-ended questions** were asked to learn more about participants' preferences and needs. Also, participants' unsolicited comments regarding the content, usability, and design of the site were recorded.

Prospective Participant Segment Demographics

Participants

PP #	Age Group	Race/ Ethnicity	State	Geographic Area	Household Income	Gender	LGBTQ+	Health Condition/ Disability
1	55–64	African American	MD	Suburban	\$35,000–\$54,999	Female	Lesbian	Congestive heart failure
2	55–64	Caucasian	FL	Rural	\$75,000–\$99,999	Male	No	N/A
3	55–64	Caucasian	NV	Urban	<\$35,000	Male	No	Spinal cord damage, spasticity
4	25–44	Hispanic or Latina	CA	Suburban	\$75,000–\$99,999	Female	No	Asthma
5	30–39	Asian American	WV	Rural	\$55,000–\$74,999	Female	No	N/A
6	45–54	Caucasian	MA	Urban	\$35,000–\$54,999	Female	Lesbian	Hashimoto's disease, celiac disease
7	45–54	African American	AZ	Suburban	\$75,000–\$99,999	Female	No	N/A

Prospective Researcher Demographics

PR #	Age Group	Race/ Ethnicity	State	Geographic Area	Gender
1	40–49	Asian American	OH	Urban	Male
2	40–49	Hispanic or Latino	RI	Urban	Female
3	30–39	Hispanic or Latina/ African American	MA	Urban	Female
4	30–39	Caucasian	DC	Urban	Male
5	40–49	Caucasian	VA	Suburban	Female
6	30–39	African American	MA	Urban	Female
7	40–49	Caucasian	KY	Rural	Female

Methodology for Analyzing Results

The usability test specialist reviewed results from the learning tasks and open-ended questions for common themes.

Key Findings

First Impressions

Positive Reactions

Both Prospective Participant and Prospective Researcher users indicated that they were pleased to see diversity represented on the homepage and later referenced throughout the website. Prospective Participants were also interested to see the “Core Values” callout and commented that an organization that is transparent about its values is more likely to be trustworthy. Prospective Researcher users were also intrigued by a program featuring data from more than one million participants.

Prospective Participant Segment

While Prospective Participant users understood the website was for a research program, the purpose of the program (and whether it was applicable to them) and the concept of precision medicine were not clear to them at the beginning of their sessions. This indicates a need to make this information clearer and more specific for users on the homepage.

Prospective Researcher Segment

Prospective Researcher users were uncertain whether researchers were a target audience for the site at the beginning of their sessions, and they commented that the website appeared to be for participants. Only one Prospective Researcher identified precision medicine as the focus of the program. Although users expressed an interest in learning more about the program, “Explore Scientific Opportunities” was not a clear CTA for this audience. This indicated a need to designate a CTA “for Researchers” on the homepage and in the navigation.

User Interests and Helpful Pages

Prospective Participant Segment

Prospective Participant users expressed an interest in a variety of pages throughout the sessions, demonstrating an interest to learn more details about the program’s purpose and process, who was involved, what people were saying about the program (in “News,” in “Stories,” and on social media), what commitments participation entailed, and how participants could benefit from the program.

Pages that Prospective Participant users found helpful included “Program Overview,” “Core Values,” and “Participation.” Users commented that these pages provided details that were unclear to them at the beginning of the test, helped them understand the purpose of the program, and increased their interest in joining *All of Us*. Still, at the end of the session, none of the Prospective Participant users was ready to commit to enrolling in the program. Each said that they would like more information first, with some specifying interest in “Who We Are,” “Funding and Partners,” and “Stories.” This indicated an opportunity to increase enrollment in the *All of Us* Research Program by making this content more accessible and clearer to Prospective Participant users.

Prospective Researcher Segment

Prospective Researcher users expressed an interest in “Funding Opportunities” and learning more about what makes *All of Us* different from other research programs, including diversity, the number of participants, the “depth” of data types, and access to the database. Pages that Prospective Researcher users found helpful included “Program Overview,” “Protocol,” and “Scientific Opportunities.” However, “Scientific Opportunities” was found to be confusing as a label, to both user segments. See recommendation under “Improving Clarity” below.

Final Tasks

Prospective Participant Segment

- Five of the users in the Prospective Participant segment identified a JoinAllofUs.org link when asked where they would click if ready to enroll in the program. One user selected the “Participants as Partners” link, and one user selected the “Consent Process” link. Palladian recommends adding a “Join CTA” link to the “Consent Process” page and a link to the “Participation page” from the “Participants as Partners” page.

Prospective Researcher Segment

- All of the users in the Prospective Researcher segment identified a Research Hub link when asked where they would click next from the “Scientific Opportunities” page.

Recommendations

Areas of Improvement

Improving Clarity

- Purpose and Eligibility
 - At the beginning of the test, only one of the Prospective Researcher users identified precision medicine as the focus of the program. All Prospective Participant users were confused about eligibility with respect to health status and whether the program focused on particular health conditions.
 - Purpose: Palladian recommends making information about the purpose of the program more explicit on the homepage and surfacing details about the purpose and program framework on the “About” page.
 - Eligibility: Palladian recommends surfacing more specific information about the different ways to get involved in *All of Us* on the “Get Involved” page. Palladian also recommends enhancing the “Participation” page by pulling information from the [“What You Would Need to Do”](#) and [“Benefits of Taking Part”](#) pages at [JoinAllOfUs.org](#).
- “Scientific Opportunities” label
 - “Scientific Opportunities” was not clearly distinguished as a separate topic from “Participation,” and Prospective Researcher users expected to find information about grant opportunities after clicking on this label. Palladian recommends changing this label to “Researcher Opportunities” or “Opportunities for Researchers.”
- “Participants as Partners” versus “Funding and Partners”
 - Prospective participant users noticed that participants were described as partners and were not aware that that this partner category was distinct from “Funding and Partners.” One participant said she expected that participants would be able to get funding based on the language. Palladian recommends specifying “Program Partners” in the appropriate navigation labels.
- Who Is Behind *All of Us*?
 - Two Prospective Participant users indicated familiarity with NIH, while others referred to NIH or *All of Us* as a “company” or “organization.” Participants indicated strong interest in learning more about who was involved, including partners and where funding was coming from. Palladian recommends explaining on the homepage that the program is part of NIH and making this connection more explicit in “About” and “Who We Are.”

Enhancing Prominence

- Program Overview Information Priority
 - Users found the information found under the “How Can *All of Us* Make A Difference?” heading on “Program Overview” particularly compelling. Palladian recommends revising the page to move this section to the top.
- Protocol Key Points
 - Users suggested that the “Summary Protocol” PDF be listed before the “Operational Protocol” PDF and asked for more detail about what types of data will be collected. Palladian recommends surfacing key points from the Protocol Summary on the “Protocol” page and adding a link to the “Scientific Opportunities” page.
- Contact Information
 - Users expressed a strong interest in having contact information more prominent and accessible on the website. Palladian recommends adding a contact callout on key pages that links to the *All of Us* Customer Service Portal.

Additional Opportunities

- Prospective Participant users demonstrated an emphatic interest in seeing “Stories” and indicated that this content could help them develop a connection to the program and motivate them to join. Palladian recommends moving forward with proposed “Stories” content and featuring this content on the homepage as well as internal pages on the site.
- Users demonstrated an interest in seeing the findings and successes achieved by the *All of Us* Research Program. Palladian recommends featuring this content as “Program and Scientific Milestones” when the time is appropriate.
- Users requested more imagery and color throughout the website. Palladian recommends implementing this with the 2020 migration to Drupal 8.

Summary of Recommended Next Steps

- Clarify the *All of Us* Research Program’s purpose and participant eligibility on the homepage.
- Change the “Scientific Opportunities” callout and label.
- Add a “Join CTA” link to the “Consent Process” page.
- Add a “Participants as Partners” page link to the “Participation” page.
- Revise the “About,” “Get Involved,” “Program Overview,” “Participation,” and “Protocol” pages.
- Develop the “Stories” content.

Appendix I: Prospective Participant Test Results

First Impressions

What do you think is the purpose of this site?

- Five participants said that the site was a medical research program, but they were not aware of the exact purpose. One of the five suggested that researchers would use the information to improve a medical application or medicine.
- The remaining two participants were unsure of the purpose.

Whom do you think the site is for?

- Four participants said the site was for “everyone” or “anyone.”
- One said it was for anyone who had a health issue.
- One said the site was for people who wanted to be in the program or who would become partners.
- One thought users would be referred to the website to sign up.

Homepage

Of everything on this page, including areas that may be clickable or not clickable, what interests you the most, and why?

- Four participants were interested in “Core Values.”
- One was interested in the icons paired with the “We are building a research program of 1,000,000+ people” heading.
- One was interested in the hero image because of the diverse group pictured.

Based on what you see on this page, are you interested in learning more about the program? What would you want to know?

- All participants wanted to learn more.
- Four asked what health issues or conditions the research was for. One of the four also asked for examples of how researchers would use the information, and another asked what progress had been made so far.
- Two asked what participation entails.
- One asked whether there were incentives to participate.

Where would you click to find out more, and why?

- Many participants answered with more than one option.
- Two said the “View Our Core Values” button. One of the two also said “About.”
- Two said they would click the “View Our Partners” button to see whether any were familiar. One of the two also mentioned “News and Events” and “About.”
- One said the “Learn More” button.
- One said “Get Involved.”

- One was stuck between three answers—“FAQ,” “Program Overview,” and “Participation”—and then mentioned clicking “Contact Us” to ask questions that were not answered on the homepage.

What would you expect to find after clicking on “About”?

- All participants expected to learn more about the purpose of the program, who was behind it, why or how it was started, and the mission or what it hoped to accomplish.
- One also expected to see the partners, contact information, and where the program was located.

What would you expect to find after clicking on “Get Involved”?

- All participants expected to find information on how to sign up or participate.
- One also expected brief paragraphs or bullet points that would just highlight different ways to get involved in the program, and what’s involved in participating.

Navigation Menu

Of everything listed in this navigation menu, what interests you, and why?

- Again, many participants answered with more than one option, mostly representing the “About” pages, “Participation,” and “Stories.”
- Two said “Participation.” One of the two mentioned not wanting to “enter into something blindly.”
- One said “Who We Are.”
- One was interested in all eight pages under “About” as well as “News and Events.”
- One listed several “About” pages: “Program Overview,” “Core Values,” “Diversity and Inclusion,” “Who We Are,” and “FAQ.”
- One said “Core Values” and “FAQ” and expressed confusion about what “Scientific Opportunities” meant but thought that it referred to participating in studies.
- One said “Stories” and that everything else seemed overwhelming and hard to connect with, but “Stories” could help make the decision about whether to learn more about the program.

Is there anything that’s listed in a different section than what you would expect?

- Four participants said no.
- One was confused because “Scientific Opportunities” and “Participation” were both listed and it seemed like both should refer to participation.
- One suggested maybe “Director’s Updates” could be under “About.”
- One was not sure whether “Stories” should be under “Get Involved” and suggested calling it “Participant Experiences” instead but did not know where else to put it.

Is there anything you would expect to see here that you don’t see?

- Four participants said no.

- One of the four liked seeing “FAQ” and “Stories” and explained, **“Stories add that human element that helps a reader of this website connect and relate.... Stories, to me, would involve patients or people with health issues that were somehow impacted. When you read stories like that, it helps you connect.”**
- One of the four was pleased to see “Diversity and Inclusion.”
- One would expect to see social media pages, because it would be easy to see what people would be saying about the program or tagging.
- One said the contact information should be listed more prominently.
- One thought fees might be involved and would like to know what type of insurance is accepted, if insurance is required.

If you opened this menu from the homepage, where would you click next, and why?

- Again, some participants answered with more than one option, mostly representing the “About” pages, “Participation,” “Stories,” and “News and Events.”
- One said all of the links under “About,” then all links under “News and Events” except “Media Toolkit,” then all of links under “Get Involved” except “Scientific Opportunities,” because no family members had health issues. Finally, the participant said “Privacy and Trust Principles” to get an idea of how well data were protected. When asked about what would be expected on “Media Toolkit” and “Scientific Opportunities,” the participant said “Media Toolkit” might be information for a marketing or PR person or information that is printed and distributed by an organization. “Scientific Opportunities” was expected to be a page where people with health issues could submit information about their symptoms and health history in hopes of finding treatment.
- One said “About,” “Get Involved,” and “Program Overview.”
- One said “Diversity and Inclusion.”
- One said “Stories,” because it would tell her what she wanted to know and would not be overwhelming.
- One said “FAQ,” to find a quick rundown of what is involved.
- One said “In the News,” then “Events,” and added that if there have been articles published about the program, it shows validity.
- One said “Participation.”

About

Of everything on this page, what interests you the most? Why?

- Three participants said, “Speed up health research breakthroughs, enabling individualized health care.” One of the three said this was interesting, because health care is generalized and everyone is different. Another said that of everything on the page, that sentence gave the best sense of what the program is and why to consider participating.
- One said “Program Overview” out of a desire to know more and mentioned wanting more information up front instead of having to click “Program Overview.”
- One said “Who We Are,” to see who is behind the program.

- One said “Protocol,” because it seemed similar to “Participation” and would answer questions about participation.
- One said “What Makes *All of Us* Different?” but was unsure why.

Is there anything on this page that seems confusing or is unclear to you?

- Six participants said no.
- One added that there were a lot of choices to pick from, and another said it felt like information overload.
- One suggested changing the heading “What Makes *All of Us* Different?” to “What Makes this Program Different?” to be more direct.

Is there anything you would expect to see on this page that you don’t see?

- Three participants said no.
- One would like to see more specific information about what the research was for, meaning which specific disabilities or health issues. Another said more “About”-type information on this page instead of having to click further for it.
- One would expect to see pictures of the staff and their bios.
- One would expect to see the results of the program’s findings and whether the findings were reported in journals.

Where would you click next, and why?

- Three participants said “Program Overview.” One of the three said that it was a logical place to start in order to get the big picture first. Another of the three was intrigued by the language about precision medicine and wanted to know how it related to “me.”
- One said “What Makes *All of Us* Different?”
- One said “Diversity and Inclusion.”
- One said “Who We Are.”
- One said “Protocol.”

Program Overview

Looking at this page, do you find the information on this page helpful? Why or why not?

- All participants found this page helpful and said it helped answered their questions about the purpose of the program.
- Three particularly liked the information under “How Can *All of Us* Make a Difference?” and found it compelling. One of the three suggested moving this section to the top of the page, because it would get readers’ attention and “hook them in.”
- Two said they found the concept of precision medicine appealing, because health care should be more specific to individuals.

What information on this page appeals to you the most? Why?

- Two participants said they were most interested in the bottom part, “How Can *All of Us* Make a Difference?” One of the two added that it was helpful and got to the point.

- One said, “Too often, health care is one size fits all...” (under “How Can *All of Us* Make a Difference?”), because it was relevant to his personal experience with health care. Another said the “Precision Medicine” section appealed for the same reason. A third found the information about precision medicine appealing, because it could make a positive impact.
- One said the “Figure out which treatments work best for people of different backgrounds” bullet under “How Can *All of Us* Make a Difference?”, because everyone is different.
- One said both sections of the page were appealing. The information under “*All of Us* and Precision Medicine” appealed because it got right to the point, and “How Can *All of Us* Make a Difference?” showed how this was different and might be better than other research programs.

Is there anything you would expect to see on this page that you don’t see?

- Four participants said no.
- One said information about who was involved.
- One said maybe a timeline discussing length of involvement for participating.
- One said information about the results and some examples of how these data would be used.

Where would you click next, and why?

- Three participants said the “Learn More” (“What Makes *All of Us* Different?”) call-to-action (CTA) button.
- Two said “Who’s Involved?” One of the two added that after learning about precision medicine, he wanted to see whether other organizations, government agencies or companies were involved, what they were doing, and how they were working together.
- One might click “Detailed Report” to see whether it was easy to read.
- One said “Protecting Data and Privacy.”

Core Values

Do you find the information on this page helpful? Why or why not?

- All participants found this page helpful.
- Two said that it was helpful to know that participants were partners in the program.
- One felt that the page conveyed that the program was honest about what it was doing with the research and why the research was important.
- One said the information on this page was extremely helpful, because it answered a lot of questions, and noted that users could be healthy or have health issues and no health insurance was required. The participant also liked the information about diversity, data protection, accessibility of data, and how the program can help people.
- One liked how participants could access their own information but was skeptical of storing information in the cloud.

- One said the page provided a lot of information about the values behind the program and that data were secure, which was reassuring.
- One liked seeing that participation was inclusive—that no one was left out and diversity was valued.

What information on this page appeals to you the most? Why?

- Three participants said participation was open to all and reflects the diversity of the United States. Two of the three also noted that no health insurance was required.
- One said everything on the page was important, but especially the first five paragraphs.
- One said the section “Participants as Partners,” because that meant each person mattered and was not just a number.
- Two said, “Transparency earns trust.” One said the program was taking every step to be transparent and not leave participants in the dark and that “Security and privacy are of the highest importance” was appealing.

Is there anything you would expect to see on this page that you don’t see?

- Four participants said no.
- One was interested to know whether there were financial incentives for participants.
- One asked how many people were in the program and added that it would be helpful to know how many people trusted the program.
- One expected to see contact information, such as a number that users could call to report violations or to ask questions about the process.

Where would you click next, and why?

- Three participants said the JoinAllofUs.org link. They all suggested they might not sign up yet but would like to see what that page contained or what was next.
- One said the “Learn More” (“Protocol”) button.
- One said “Funding and Partners” to find out who was funding the program and explained that it might help prove the program’s legitimacy to show where the money was coming from.
- One would click on the “Participants as Partners” link to see what other organizations had partnered to be part of this program.
- One said “Diversity,” to find out what types of diversity that included.

Get Involved

Of everything on this page, what interests you the most? Why?

- Five participants said “Participation.” One of the five would click to find out about the time commitment. Another said “Participation” seemed like the easiest option and was not based on money, but the participant was confused by the labels and said the difference between scientific opportunities and participation was not clear. The same participant said it was confusing that “Partners” seemed connected to funding on this page, whereas previous pages had described participants as partners.

- One said “Funding Opportunities,” because a participant could become a partner.
- One said the first paragraph on the page, because it provided a recap.

Is there anything you would expect to see on this page that you don’t see?

- Four participants said no.
- One would like to see “Stories” here, as it was listed under “Get Involved” in the navigation and users might be more motivated to get involved after seeing the stories.
- One would like to see an overview of the commitment involved in participating.
- One would like to see a contact email address, live chat, or phone number to contact for people who were unsure whether they qualified or wanted to ask a specific question.

Where would you click next, and why?

- Three participants said “Participation.”
- One said the “Join Now” (“Sign up at JoinAllofUs.org”) button.
- One said “Scientific Opportunities.”
- One said “Scientific Opportunities” first, then “Participation.”
- One said “Partners.”

Participation

Do you find the information on this page helpful? Why or why not?

- All participants found this page helpful and noted that specific information about the participation process, such as providing blood pressure, height, and weight measurements, was provided.
- One also appreciated that the link to sign up was at the top of the page.
- One noted that “NIH” was not spelled out at the bottom of the page and asked what it referred to.

What information on this page appeals to you the most? Why?

- Four participants said they were most interested in the first two paragraphs or the consent process. One of the four said the information at the top was most helpful, because it explained the consent process and how long it would take to sign up. Another was interested in the consent process and wanted to see the list of rules and what consent meant for participants.
- One appreciated that anyone over the age of 18 could participate and said participants had to be 21 for other things.
- One said that the second paragraph was most interesting, because it answered some specifics about what participants were going to do.
- One liked how participants could be partners “instead of feeling like a number” and noted that the program seemed inclusive.
- One said the third paragraph was most appealing, and where it said the information from the program “will be used for new knowledge, approaches, and treatments,” it elicited hope for the future of medicine.

Is there anything you would expect to see on this page that you don't see?

- Three participants said no.
- One would like to see a link to the local enrollment centers that are mentioned on the page.
- One would like to see specific information about what types of things participants need to do.
- One suggested a brief blurb about how long participation would be, **“because people want to know, ‘How much of my time is this going to take?’ I feel like that’s a huge piece of getting people to actually join.”**
- One suggested changing the button at the bottom so that the full sentence “Learn more at JoinAllofUs.org” was in the button so it was easier to see where to click.

Where would you click next, and why?

- One participant said the JoinAllofUs.org text link, and another said the “[Learn more at] JoinAllofUs.org” button.
- Two said “Consent Process.” Both said they were curious about the process but not necessarily ready to join.
- One said the “Sign up for email updates” link, to see email updates featuring other people who had enrolled in the program.
- One said “Participants as Partners” and wanted to see what that really meant.
- One would still want to read about the “Program Partners” to see the companies that backed this program.

[If the participant did not respond to the previous question by clicking on a Join site link (either in-text link or CTA)] If you were interested in becoming involved with the program as a researcher, where would you click, and why?

- Three of the five participants who did not already choose a JoinAllofUs.org link said JoinAllofUs.org.
- One said “Participants as Partners.”
- One said “Consent Process” but was not ready to enroll as a participant. The participant also wanted to click “Funding and Partners” and “News and Events” before enrolling, wanted to know how the organization was funded, and was curious to see partners and whether there were names or organizations the participant recognized.

Debriefing Questions

Overall, what was your impression of the site?

- One participant said the website had some good, interesting, and intriguing content and was interested in the idea of precision medicine and how research could accelerate treatments.
- Three said it was easy to navigate and explained everything well. One of the three said that nothing was too hard to find and noted that no matter what page the user was on,

the user had access to other topics. One of the three also appreciated that it showed images of people of different backgrounds.

- One said overall, the site seemed very scientific and very technically written out. It did not really showcase much about “Stories,” and it did not focus on the individual—more so on the program—and if the participants were really partners, it should focus more on them.
- One said it was less overwhelming than other government websites.
- One got the impression that this company would like to collect data from people of different walks of life to help them customize a medical plan, learn risk factors of certain diseases, take the right medicine, or identify medicines to create medical programs or medical options for individuals.

Did you feel like the information was presented in a way that made sense? If not, what would you change?

- Six participants said yes. Two of the six added that they wanted to see more pages for more information. Another of the six noted that it seemed like the site was also for scientists and did a good job talking to two audiences.
- One said the site was really wordy and suggested simplifying it, with more clarity and more visuals, maybe with a table or bullet points.

What did you think of the layout of the content? Was anything in the navigation confusing or unclear to you?

- Five participants said the content was presented very well and the navigation was not confusing. Two of the five said that the pages and sections were not overwhelming or too long.
- One said users had to click too much to get to the details and did not see who was involved or who the participants were, adding, **“If you can’t seem honest, transparent, and personable, then I won’t even need the rest of that information.”**
- One said there were too many links listed on the “About” page and not enough details about what was found after each link and that the contact information should be more accessible.

Was there any part of the website where you would have liked to have seen more information? Was anything missing?

- Two participants said no.
- Two said they wanted to see contact information. One specified wanting to see that within the body of the pages and noted that it was in the “About” section.
- One said nothing was missing but wanted to read more about the program.
- One wanted more information to connect with whoever was behind the program and that it was important to get a sense of who they were. The participant wanted to be able to connect with another participant, read their stories, and have that showcased in the front. **“I feel like that would have connected the whole premise and mission of this program for me.”**

- One would like to see more pictures, including pictures that showed who the program participants were.
- One wanted to see more information about what data would be used for, data security, and results of the program.

Based on what you saw today, would you be interested in enrolling as a participant in the *All of Us* Research Program? Why or why not?

- All participants were tentatively interested but said they would need more information before they decided to join.
- One mentioned not having a specific health issue but thinking that if participating could help someone else, that was enough reason to sign up.
- One would search online and see whether others had reviewed or made posts about the program and also mentioned not being sure what conditions it covers and whether it would apply personally. This indicated a lack of understanding that the program was open to participants of any health status.
- One would click the “Join” link to try and get a little more information right before signing up, noting that if the site were too vague, they probably would not sign up.
- One wanted to know more about the time commitment.
- One said yes because of personal health issues and wanted to be involved in anything that would help. The participant did not mind providing feedback or blood samples.
- One asked, “What’s the fee? Is it monthly? Is it based on the type of medicine? That’s important for me to consider [before getting involved].” This indicated a lack of understanding that the program was free and did not involve a trial or treatment.

Would you recommend this site to others? Why or why not? If yes, how would you most likely to share it?

- Four participants said they would need to read more about it, but if they decided to share, they would send a link via text message. One of the four specified not being sure about the time commitment. Another might also share it on social media.
- One said yes and would tell them face to face or through telephone conversation, possibly sending text to follow up with a link to the website.
- One said yes, would suggest that people with health issues share verbally, and would ask them to search for it or maybe email a link to the website.
- One said yes because the program is important and getting many kinds of people involved is important. The participant would share the website as a link through text or directly as an email.

Appendix II: Prospective Researcher Test Results

First Impressions

What do you think is the purpose of this site?

- Six participants said that it was a participant recruitment site. Two of the six identified the name “*All of Us* Research Program.” Another two of the six noted that the site was gathering data from participants of different backgrounds to increase diversity and breadth of clinical data to be more representative of the United States.
- One said it seemed like the site was for precision medicine, but it was not specific.

Whom do you think the site is for?

- Four participants said everybody or the general public.
- Two said it seemed like the site was more for people interested in enrolling than for collaborators or researchers.
- One was not sure whether the site was for researchers or patients.

Homepage

Of everything on this page, including areas that may be clickable or not clickable, what interests you the most, and why?

- Four participants were interested in “We’re building a research program of 1,000,000+ people” and the image next to it. One of the four was also intrigued by “Interested learning more about the *All of Us* Research Program?” and the “Learn More” button. Another of the four also liked the diversity represented in the hero image.
- Another participant also liked the diversity in the hero image and said it was inclusive. The participant also liked to see “Core Values” listed and appreciated that users could click “Learn More” or “Subscribe.”
- One liked the top (hero) image area but would not necessarily click “Join Now” until after learning more.
- One said “Funding and Partners” because they were interested in ways to get funded.
- Another was interested in the “Learn More” button to learn more about the program.

Based on what you see on this page, are you interested in learning more about the program? What would you want to know?

- All participants said yes.
- Two said they were interested in learning more about what types of data the program was gathering, and one of the two asked whom the data were shared with.
- One asked how they could benefit from the program and how it would improve quality of life.
- Two said they would sign up for email. One of the two wanted to know who the partners were. The other was interested in funding and collaborative opportunities.
- Another was also curious about the partners and asked whether they were other labs.
- One was intrigued by the idea of enrolling a million people in this massive program and wanted to learn more about it.

Where would you click to find information about research opportunities?

- Three said “Explore Scientific Opportunities,” but one was unsure whether this was correct.
- Two said “Funding and Partners.”
- One would click “Learn More” under “Interested in learning more about the *All of Us* Research Program?” and then subscribe to email to see whether anything is coming down the pipeline.
- One said the “Join Now” button.

Where would you click to find information about funding opportunities?

- All participants said “Funding and Partners.” One would also subscribe to email updates.

What would you expect to find after clicking on “About”?

- Three participants expected to see information on what the program is looking for and the purpose. One of the three said it should also talk about who was behind the program. Another of the three asked whether it was a onetime project or followed people over time.
- Two expected to see information about NIH’s role in the program. One of the two added that this section should be a general overview for all populations. The other said it should include the history of the program and contact information.
- One said it should explain precision medicine.
- One expected to see the program mission.

What would you expect to find after clicking on “Get Involved”?

- Five participants expected to see information for both researchers and prospective participants. One of the five expected the primary focus to be on participants. Another expected to see information on who these million people were.
- One expected to see information about grant opportunities and how researchers could collaborate with NIH, maybe by collecting samples or recruiting patients.
- One expected to see information about participating in the program and what participants needed to do.

What would you expect to find after clicking on “Funding and Partners”?

- Four of the participants expected to see information on partners that might include other sites, academic institutions, government agencies. One of the four also expected to see information about where funding for the program was coming from.
- Two participants expected information about grant opportunities. One of the two also expected information on companies that researchers could partner with.
- One participant was not sure and was wondering who the partners were.

Navigation Menu

Of everything listed in this navigation menu, what interests you, and why?

- Three participants said “Funding Opportunities.” One of the three was also interested in “Who We Are,” “Funding and Partners,” and “Scientific Opportunities.”
- Two said “Program Overview.” One of the two was interested to know why the program is collecting data from one million people and what the purpose is. The second of the two was also interested in “Protocol.”
- One would click “Who We Are” first, then “Diversity and Inclusion” to see the population represented.
- One was interested in “Diversity and Inclusion” first, because it is a main goal for future research to have representation. The participant also said “Protocol” and “Scientific Opportunities.”

Is there anything that’s listed in a different section than what you would expect?

- Two participants said no. One would not expect to see “Diversity and Inclusion” but assumed that it was there because the program was recruiting people from all backgrounds.
- Two mentioned “Stories.” One of the two suggested putting it under “About,” because stories provide background about people participating in the initiative. The second of the two did not know what “Stories” referred to but guessed it was about researchers who have participated in the program.
- One would expect “Contact” to be its own tab and was not sure what “Stories” and “Director’s Updates” were.
- One participant was not sure whether “Protocol” fit under “About” but was not sure where else to put it.
- Another would expect “Protocol” to be in a different section if it was for participants.

Is there anything you would expect to see here that you don’t see?

- Six participants said no.
- One participant said a subscribe option under “News and Events.”

If you opened this menu from the homepage, where would you click next, and why?

- Three participants said “Program Overview.” One of the three would click “Protocol” second.
- Two said “Funding Opportunities.”
- One said the “Join Now” button, because it was the first thing the participant noticed.
- One said “Who We Are.”

About

Of everything on this page, what interests you the most? Why?

- Three participants said “Protocol.” One of the three was interested in details such as inclusion and exclusion criteria. A second of the three was curious to learn whether this was clinical- or population-based research.
- Two said “Program Overview.”

- One said the first paragraph under “About” and mentioned understanding the program better after reading it but still wanting more information.
- One said “What Makes *All of Us* Different?” was most interesting, because NIH research and other medical research usually follow the same process and priorities.

Is there anything on this page that seems confusing or unclear to you?

- Three participants said no.
- One said the text under “What Makes *All of Us* Different?” was redundant with the heading, added that it did not tell much about what to expect from the link, and suggested adding more information about what users would get from clicking further.
- One was unclear whether the program was looking for ethnic groups or individualized care and still did not understand the program’s purpose.
- One was not sure why “Protocol” was listed on the page.
- One said the page seemed vague overall.

Is there anything you would expect to see on this page that you don’t see?

- Two participants said no.
- Three said they wanted more details. One of the three said there should be more information about the program’s goal and who’s involved.
- Two suggested adding more images.

Where would you click next, and why?

- Three participants said “Protocol.”
- One said “Program Overview,” to find out the purpose of the program. Another said either “Program Overview” or “What Makes *All of Us* Different?” but then decided to click “Program Overview,” since it was listed first.
- One said “Funding and Partners.”
- One said “FAQ,” to see whether the page listed anything relevant that the participant had not thought about.

Program Overview

Looking at this page, do you find the information on this page helpful? Why or why not?

- All participants said this page was helpful.
- Four said they liked the clear explanation of precision medicine. One of the four suggested moving the “How Can *All of Us* Make a Difference?” section above the precision medicine information. Another of the four was still wondering how the program is collecting data.
- Two said the page answered many questions they had had about the program.
- One said the page was helpful as an overview but was not specific enough. The participant still did not understand what the program did.

What information on this page appeals to you the most? Why?

- Two participants said the “Detailed Report” PDF.

- One said the opportunity for “Big Data” analysis.
- One said, “*All of Us* is building a diverse database that can inform thousands of studies on a variety of health conditions.” Another liked precision medicine and the idea of building a diverse database.
- One said the “How Can *All of Us* Make a Difference?” section was especially helpful.
- One said that for researchers, this page was not interesting. It was more useful for participants.

Is there anything you would expect to see on this page that you don’t see?

- Three participants said no.
- Two suggested more information about how the program was organized, how collaborations work, and the procedure, processes, and methods.
- One suggested adding clear tasks for researchers or participants.
- One asked where this database was, who had access to it, and how it would be used.

Where would you click next, and why?

- Three participants said the “Detailed Report” link.
- Two said “Who’s Involved.”
- One said “About.”
- One said “Funding and Partners.”

What Makes *All of Us* Different?

Do you find the information on this page helpful? Why or why not?

- Six participants said the page was helpful.
- Two of the six said the information about data collection, who will have access to data, and the data platform was helpful.
- One of the six said the information about diversity, eligibility, and program duration was helpful.
- One of the six said the page was akin to a miniature consent form, explaining all aspects of the program.
- One of the six said the page was helpful but suggested moving up the information about protecting data to reassure people.
- One of the six liked how the page had laid out different domains, such as accessibility, and added that the diversity description could be stronger, because it did not explain why people were left out of research in the past. The participant added that the page should acknowledge that certain groups were systematically left out.
- One said the page appeared targeted to the general population and would be useful for that audience but not for people who are involved in research. To a researcher, duration is the only interesting thing, because it relates to the amount of funding.

What information on this page appeals to you the most? Why?

- Two participants said the paragraph about diversity was appealing. One of the two said the database with a diverse population of Americans will offer a lot of research opportunities. The second said a diverse database meant research would be more accurate.
- Two said the paragraph that started with “Depth,” because it talked about types of data and how they would be collected. One of the two also appreciated that people could use wearables or trackers, adding that these may be good for elderly participants who may not be as savvy online.
- One said the data repository and wanted to contribute or combine data.
- One said “Participants as Partners” and was curious to see what that meant.
- One said the accessibility and innovation paragraphs and the idea of moving to a data platform many people could use.

Is there anything you would expect to see on this page that you don’t see?

- Five participants said no.
- Two said they wanted more details, and one of the two asked what types of data would be collected.

Where would you click next, and why?

- Three participants said the “Get Involved” button.
- Two said the “Data Platform” link. One of the two was interested in knowing how to use the data and what kinds of data would be there.
- One said the “Diversity” link, to see how this program defined diversity.
- One said “Funding and Partners.”

Protocol

Do you find the information on this page helpful? Why or why not?

- Six participants said yes.
- Another said it could be helpful, but that participant would need to click the “Protocol” PDF link to find out.
- Two of the six noted that they appreciated the transparency of the IRB protocol process and that users could download the document from the website. One of the two explained that it provided added confidence that the program had been properly vetted.

What information on this page appeals to you the most? Why?

- Six of the participants mentioned the “Operational Protocol” PDF link.
- The other participant said the “Protocol Summary” PDF link, and four of the six participants also mentioned the summary PDF link and said they would read the summary first before deciding to read the longer PDF.
- One of the six would look at “Health Surveys” first to see what information was being collected. Another one of the six said both the “Operational Protocol” PDF and “Health Surveys.”

Is there anything you would expect to see on this page that you don't see?

- Six participants said no. One of the six would change the order of the PDFs and put the "Protocol Summary" link before the "Operational Protocol" link.
- One said a downloadable PDF that said what variables will be accessible by certain date, such as weight, height, and cholesterol, to see whether the program was relevant for personal research interests.

Where would you click next, and why?

- Four participants said the "Protocol Summary" PDF.
- Two said "Operational Protocol."
- One said "Health Surveys," to see what variables would be relevant to the participant's research portfolio.

Get Involved

Of everything on this page, what interests you the most? Why?

- Four participants said "Scientific Opportunities," and one of the four was also interested in "Partners."
- Two others said they were most interested in the Research Hub mentioned under "Scientific Opportunities."
- One said "Partners" and "Funding Opportunities."

Is there anything you would expect to see on this page that you don't see?

- Five participants said no.
- Two wanted more information on how researchers could get involved. One of the two asked whether there was an opportunity to collect the data or only to access the data. The other would like to see how to partner with the program.

Where would you click next, and why?

- Six participants said "Scientific Opportunities." One of the six also said "Participation" and was not sure which to click first.
- One would click "Partners" if there were a button but, since there was no button under "Partners," would click the "Join Now" button.

Scientific Opportunities

Do you find the information on this page helpful? Why or why not?

- All of the participants found this page helpful, particularly the information about accessing the data on the Research Hub.

What information on this page appeals to you the most? Why?

- Three participants said the Workbench, and one of the three specified that this was because users were able to look up genetic differences, biomarkers, drugs, and various classifications.

- Two said all of the information under “About the Research Hub.”
- One said the Data Browser and assumed it was a list of variables.
- One said the “Benefits for Researchers” section and was impressed at having data already cleaned and curated.

Is there anything you would expect to see on this page that you don’t see?

- Five participants said no. One of the five suggested moving the Research Hub information higher on the page.
- One said “Scientific Opportunities” sounded like there should be an opportunity to write a proposal and suggested changing the page title.
- One expected more information about the types of data.

Where would you click next, and why?

- Three participants said the Workbench.
- Three said the Data Browser, and one of the three also said “Data Snapshots.”
- One said the “Learn More...Researchers as Partners” button.

[If the participant did not respond to the previous question by clicking on a Research Hub link (either in-text link or CTA)] If you were interested in becoming involved with the program as a researcher, where would you click, and why?

- N/A.

Debriefing Questions

Overall, what was your impression of the site?

- Five participants said the site was interesting or good, but they wanted to see more details. Three of the five specified that they wanted more clear information on the homepage. Two of the three said they first thought the website was only for participants.
- Two said the site was clean, simple, and transparent without a lot of distractions. One of the two said it was concise and easy to navigate, but that participant was expecting more visual media content.

Did you feel like the information was presented in a way that made sense? If not, what would you change?

- Five participants said yes.
- One suggested using more graphics such as flow charts or illustrations.
- One said the pages looked professional, with a reasonable number of links on each page, but suggested using direct language for specific audiences.

What did you think of the layout of the content? Was anything in the navigation confusing or unclear to you?

- All participants said the navigation was not confusing.
- One could see “Stories” under the “About” section.

- One said it felt concise and if users wanted to read more, they could. The participant added that there was not overwhelming text or information on any page.

Was there any part of the website where you would have liked to have seen more information? Was anything missing?

- Four participants said nothing was missing, but two of the four were curious to see more pages, and one said more information should have been available earlier.
- One said the site was light on detail but made sense overall.
- One participant wanted more information about joining the Workbench.
- One was curious whether the data included mental health information.

Based on what you saw today, would you be interested in viewing the data on the Research Hub and registering for the Workbench? Why or why not?

- Six participants said yes. One of the six said it should have a wealth of data and useful information. Another would be especially interested to pull data that were already cleaned and analyzed.
- One would look to see whether registering was a complex process and to see more details about what types of data would be accessible.

Would you recommend this site to your colleagues? Why or why not? If yes, how would you be most likely to share it with them?

- All participants said yes and said they would share a link through email.
- One might also share it verbally.
- One would share the site specifically for the Workbench.
- One especially wanted to find the most pertinent link to send to junior colleagues who need to expand to post-surgical research.