

Americans' Motivations for and Barriers to Engaging with Science

EXECUTIVE REPORT | 5•12•22

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Study and
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Support
Provided by



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Science Interests

Science Engagements

Barriers to Engagement

Project Goals

PRIMARY GOAL

To provide science engagement practitioners **insights and data** to develop **more effective public engagement activities**.

SUB-GOALS

- **Assess Americans' willingness** to participate in science-related activities
- **Identify factors that predict** one's willingness to engage
- **Determine barriers to engagement**, especially among African-American (AA) and Hispanic adults



KEY FEATURES of OUR STUDY

- **First comprehensive** national study
- We delve into **motivations** that drive engagement
- **Oversample of African-American and Hispanic adults** to give higher resolution data

Research Methodology



Focus Groups

- Eight virtual focus groups
- Some broad, some focused exclusively on African American, Hispanic, and Young adults
- Conducted before (September 2021) and after (February 2022) the survey



Survey

- National online survey
- Approximately 50 questions
- 2,590 American adults only
- Statistical oversampling of African American and Hispanic adults
- Fielded December 3–23, 2021

Science Interests

Exploring the motivations behind Americans' interests

Organizations

_____ _____

_____ _____

Hobbies

_____ _____

_____ _____

Causes

_____ _____

_____ _____

Science Interests

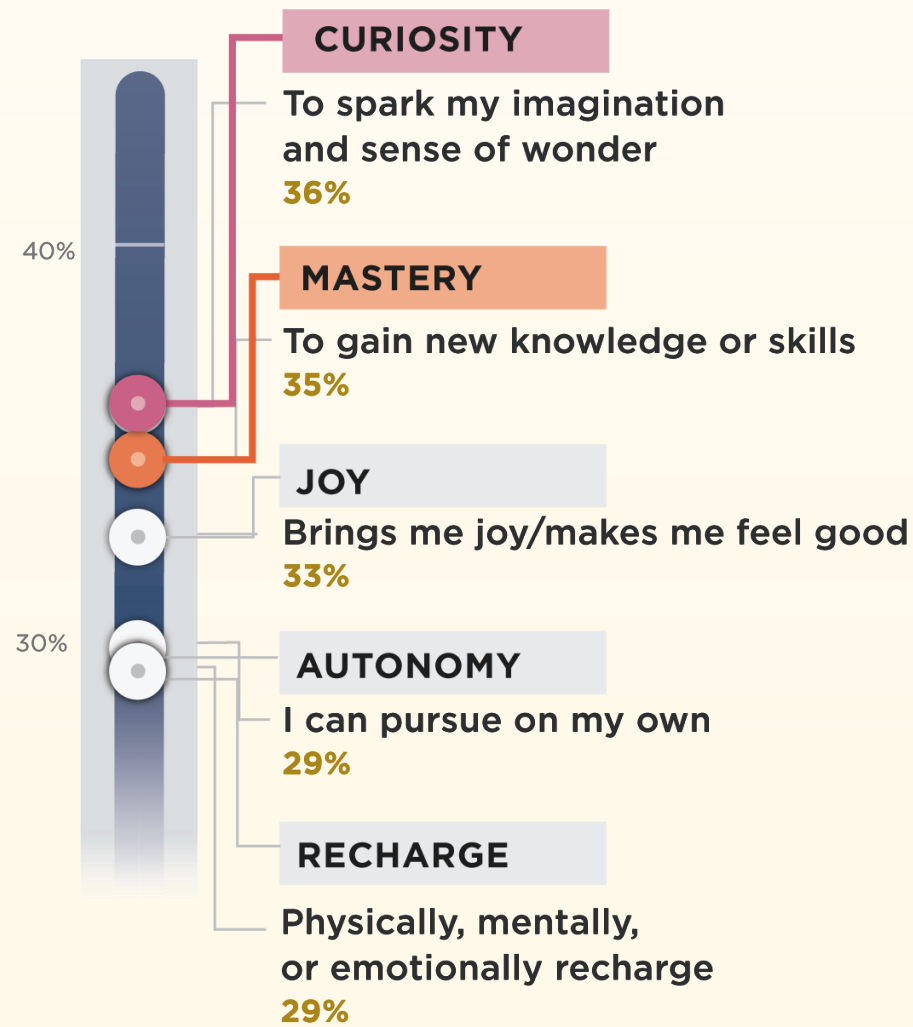
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94% of Americans are interested in **at least one science topic.**

20 possible motivations behind these **interests?**

Top 5 Motivations for Science Interests



Curiosity Is Key to Science Interest

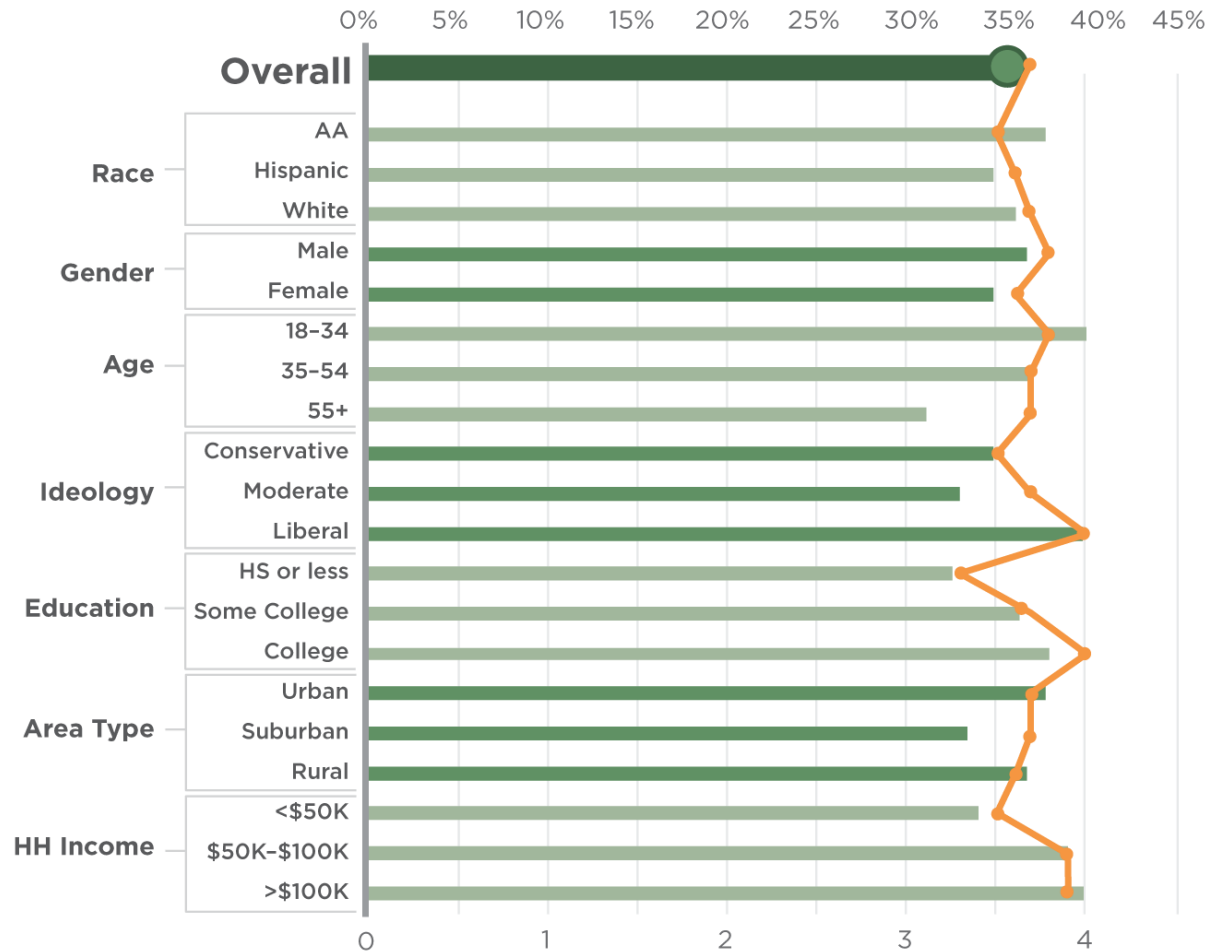
High curiosity—the rate of which is consistent across population segments—tracks closely with number of selected science topics

Percentage That Are Highly Motivated by **Curiosity**

36%

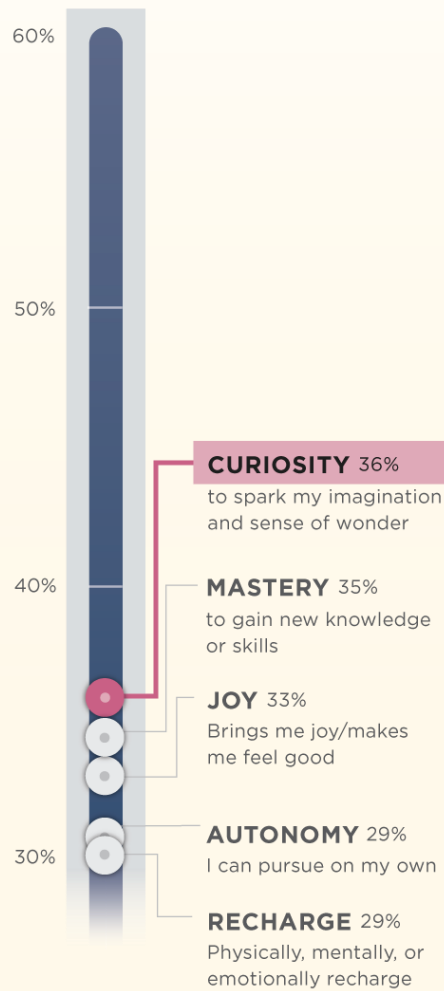
3.7

Number of Selected **Science Topics**

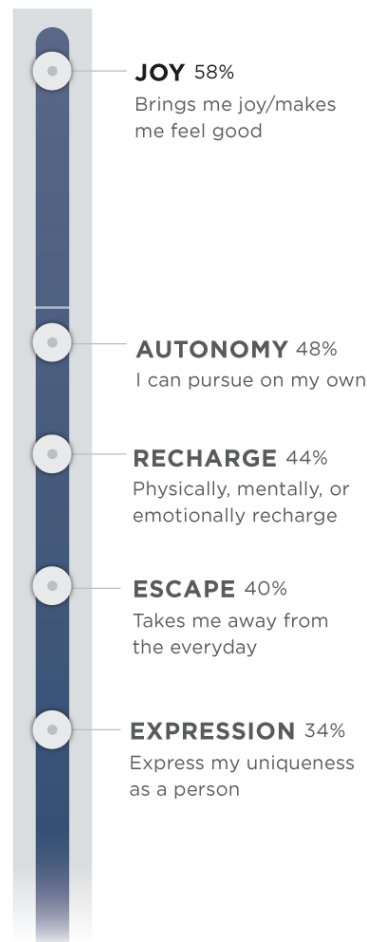


Comparing Top 5 Motivations

Science



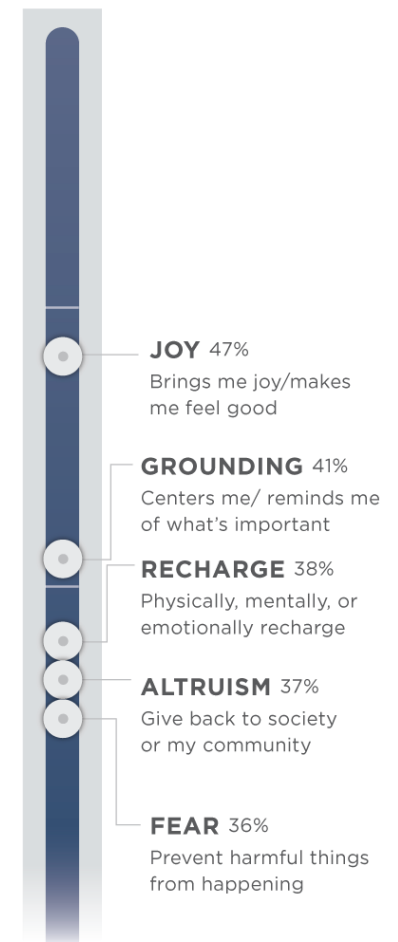
Hobbies



Causes

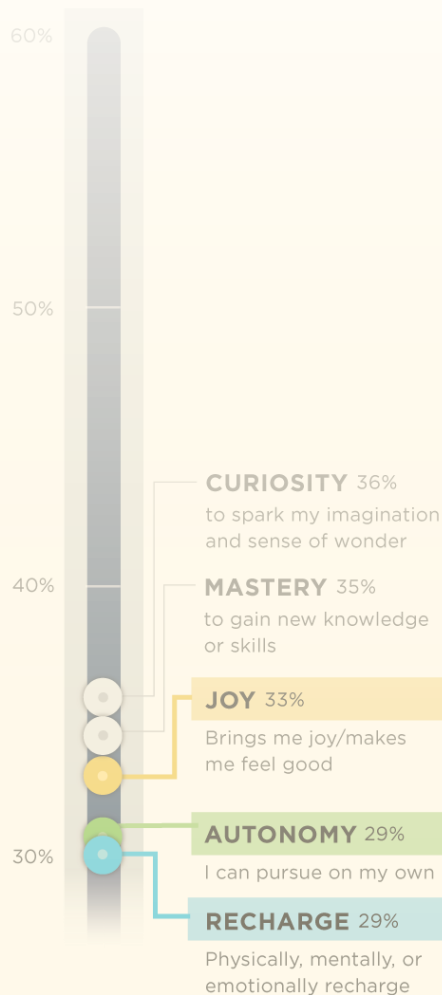


Organizations

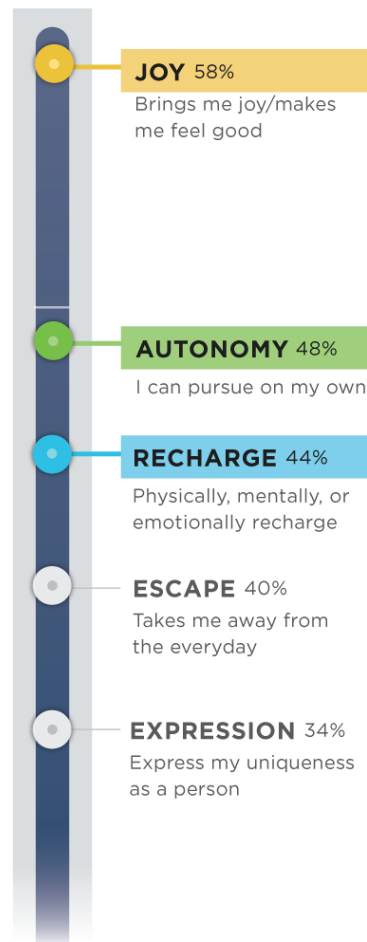


Comparing Top 5 Motivations

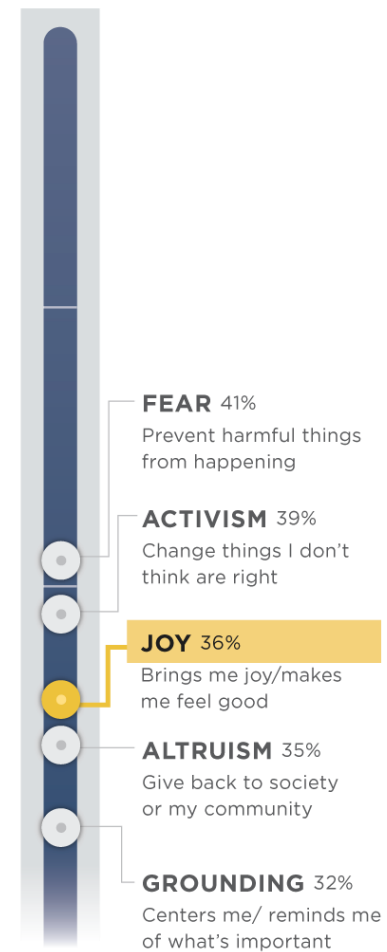
Science



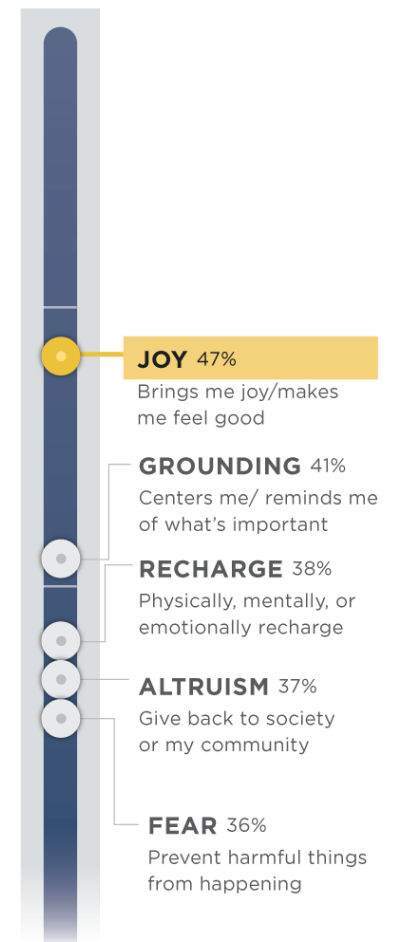
Hobbies



Causes



Organizations



Science Engagements

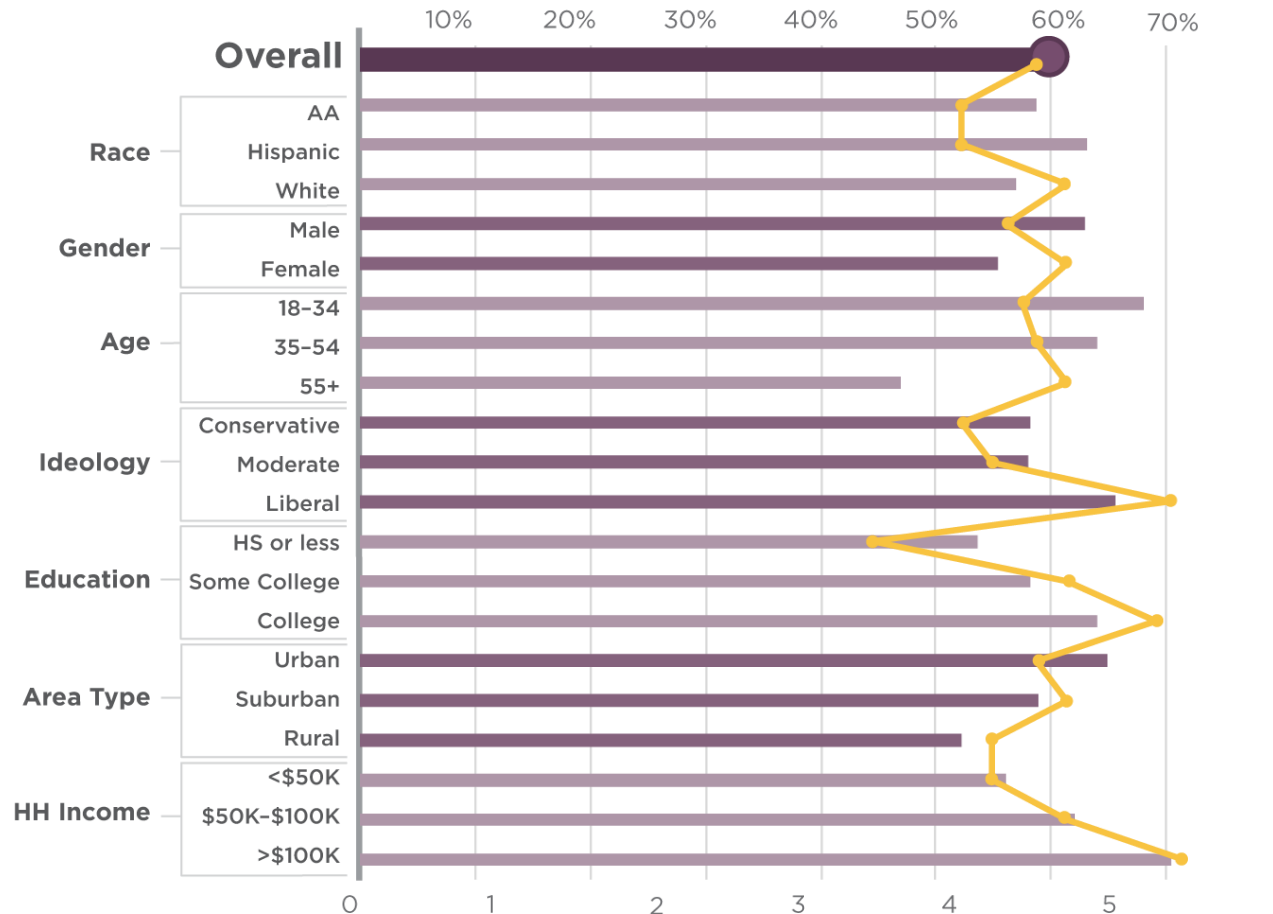
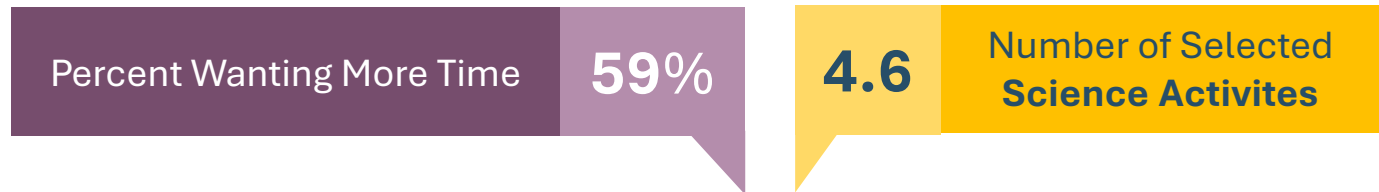
Exploring the motivations behind Americans' engagement with science



94% of Americans had an interest in **at least one science activity.**

Wanting More Time with Science

Most Americans want more time to engage with science, and those that do select a greater number of science engagement activities.



Motivations for Science Engagement

Using a regression analysis, we identify the motivations that positively affect the number of selected engagement activities.

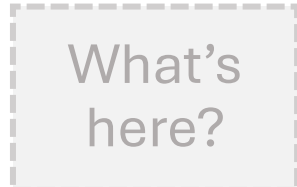
White Adults

Avg. 4.8 activities



African American Adults

Avg. 4.1 activities



Hispanic Adults

Avg. 4.1 activities



Perceiving Connections

Approximately three-quarters of African American and Hispanic adults see **connections between their science and non-science interests**. Among white adults, it's lower, about two-thirds.

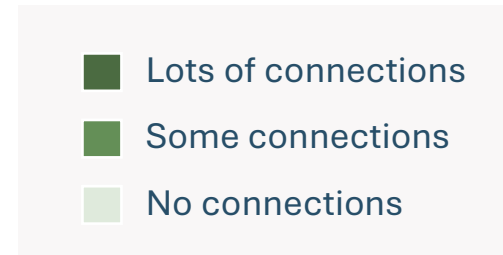
White Adults



African American Adults



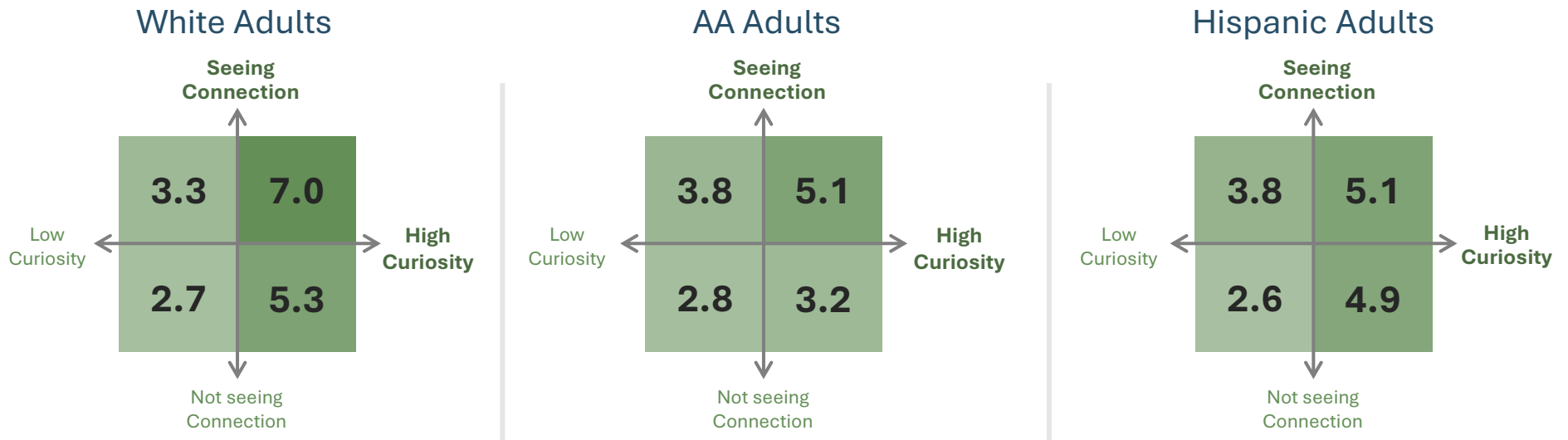
Hispanic Adults



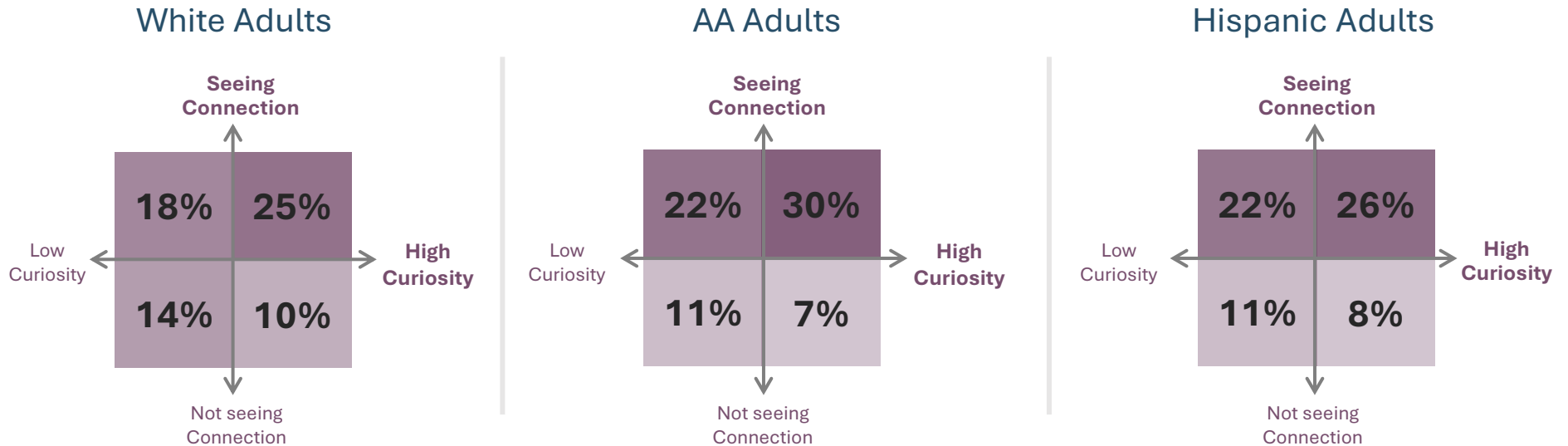
Roles of Curiosity and Connection

Curiosity and connection motivate selection of more engagement activities.

Number of activities selected



Percent of respondents



Respondents with moderate curiosity are omitted for clarity

Curiosity and Connection motivate different kinds of engagement activities

Curiosity has the most influence on interest in casual, convenient, and/or one-time events.



Watching a movie/TV program about nature, science, or technology



Listening to podcasts or radio program about science-related topics



Visiting a science museum

Connection has the most influence on interest in more participatory and/or longer term activities.



Participating in a discussion to help set priorities for future research



Collaborating with scientists on research question that benefits your community



Being a research subject in experimental research

Barriers to Engagement

Barriers to Engagement

Logistics

- I don't have time
- I don't know where to find activities/am not made aware of them
- I don't have anyone who will participate with me
- They are too expensive
- There are no opportunities to participate that I can access
- It's hard for me to find transportation to places where these opportunities take place

I don't have the time.

I find them boring

Value Proposition

- I find them boring
- It usually isn't worth the time or cost
- I tend to be disappointed in the experience
- They are too geared toward children
- There are not enough options/there is not enough variety in options
- There are too many options so I don't get to do all that I would like to
- They are hard to understand
- Things I am interested in are not usually covered

I feel uncomfortable asking questions about topics I don't know much about, so I don't enjoy the experience

Belonging

- I feel uncomfortable asking questions about topics I don't know much about, so I don't enjoy the experience
- I don't feel welcome in places like museums, science centers, etc.
- In the past, I have felt embarrassed or put on the spot at some of these activities
- I have been treated with disrespect in these situations, so I avoid them

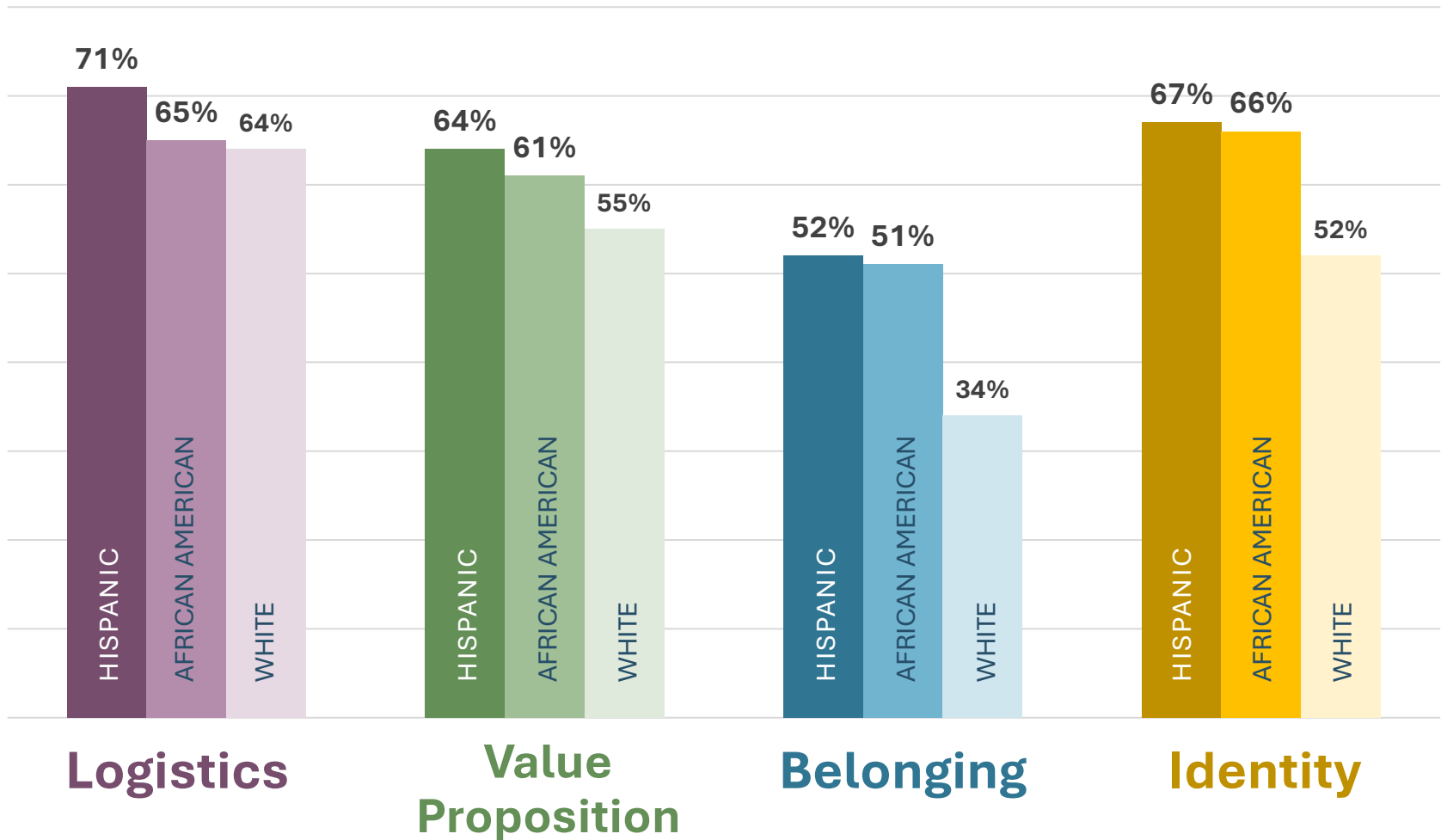
Science activities don't reflect contributions of people with backgrounds like mine

Identity

- Science activities don't reflect contributions of people with backgrounds like mine
- Not enough exhibits or activities are in the language I speak/my family speaks
- I am not much of a science person; other things engage me more
- Museums and other science organizations are not doing enough to create experiences that people like me enjoy
- Events and activities related to science don't seem to be for people like me
- Science exhibits and activities are usually about the accomplishments of white men

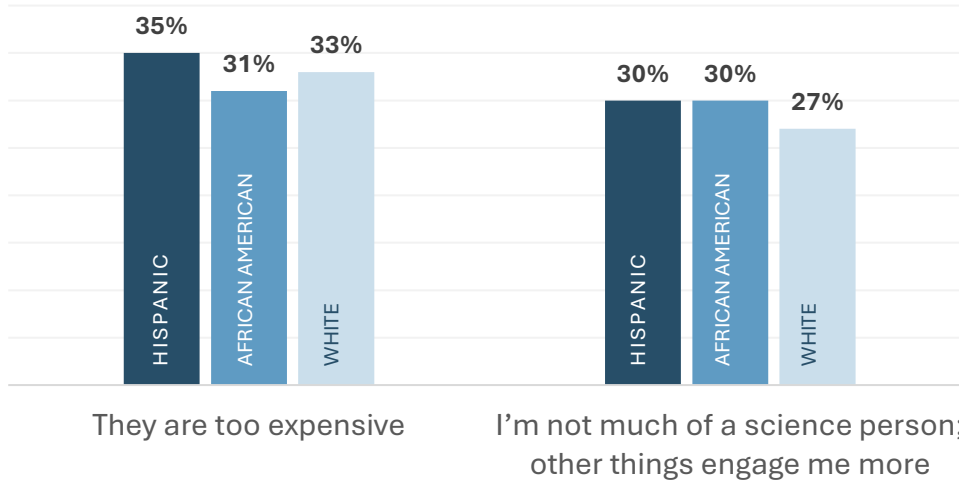
Hispanic and African American adults are more likely to experience barriers

Percent that selected at least one barrier in these categories

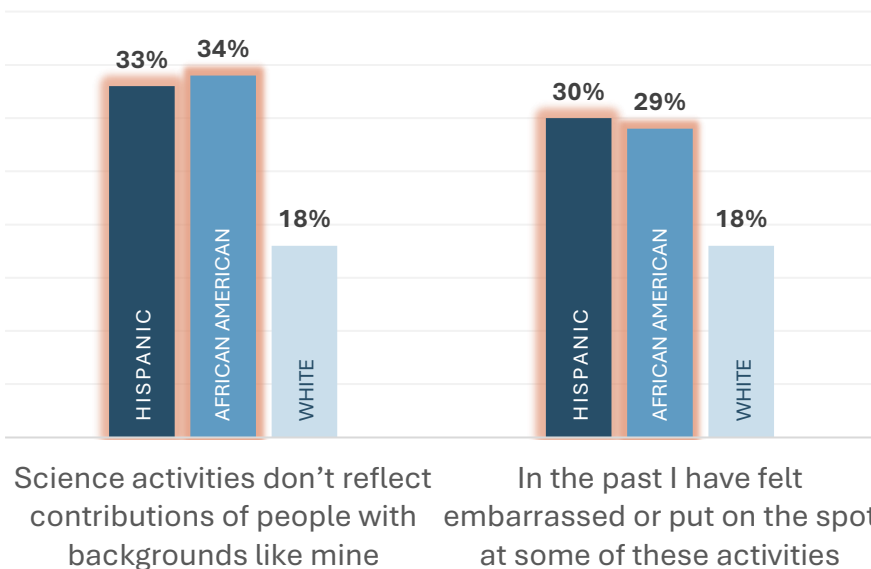


Some barriers...

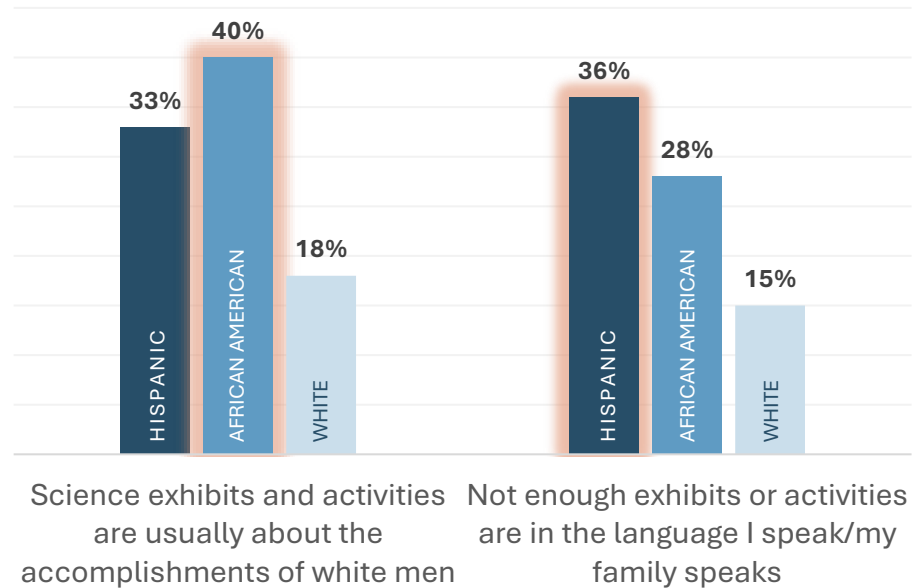
Impact everyone



Impact both African American and Hispanic adults equally



Impact one racial/ethnic community more than others



Barrier statements

Barrier statements are expressed through an individual's nuanced experience.

“ I think representation goes a long way in the lack of sort of feeling welcome...”

BELONGING

“ It's not like a library where it truly is come one come all. So there is a sense that you have to have some type of socio-economic standing to be able to acquire knowledge or the benefits of being in science centers.”

IDENTITY

“ We're a family of three. To go to the science center and go to exhibits, it's going to cost over \$100. And not everyone has that...”

LOGISTICS

Participation does not always indicate the absence of barriers but instead may be the result of an individual working to overcome them.

“ It's like you have to put in extra, have to do twice the work...”

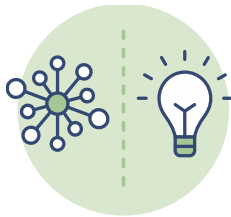
“ I believe it's my right and it's my privilege to be there, so that's why I always do it...”

Americans who are most likely to engage also report the most barriers to engagement.

Key Take Aways



Curiosity is the principal motivator of science interest, and is found equally across all segments of American society.



While curiosity and connection are both motivators of engagement with science, they lift interest in different kinds of activities, and vary across different racial/ethnic groups.



Barriers to engagement related to feelings of belonging or identity have a greater impact on African American and Hispanic communities.



Impact of barriers should be evaluated based not only on those who are deterred but also on those who are putting in extra work to participate despite the barriers.