

## 2023 Human Cognitive and Behavioral Science – Request for Applications

The Human Cognitive and Behavioral Science RFA prioritizes research that produces foundational knowledge about the neurobehavioral differences associated with ASD. These projects are expected to inform or relate to the development and refinement of tools needed for translational efforts, such as biomarkers and outcome measures. Special emphasis is placed on objective, quantitative measures that may be used in conjunction with standardized clinical measures and genomic information to better characterize phenotypic and neurobiological variability within and across individuals with ASD.

Three tracks are offered within this RFA solicitation: Explorer, Expansion and Collaboration. The Explorer track is appropriate for early-stage projects in which establishing feasibility and proof-of-concept are the most relevant outcomes of the grant period. The total budget is \$500,000 or less, inclusive of 20 percent indirect costs, over a period of up to two (2) years. The Expansion track is appropriate for more mature projects with evidence of feasibility and preliminary validity, for which goals such as scalability, generalizability and/or more comprehensive measure validation are now the most relevant translational outcomes. The total budget is \$900,000 or less, inclusive of 20 percent indirect costs, over a period of up to three (3) years. The Collaboration track is appropriate for multi-lab, cross-institutional collaborative projects. The total budget is up to \$750,000 per lab, for up to four (4) labs, over a period of up to three (3) years. Collaborative proposals should be built around transdisciplinary teams tackling a critical issue in the neurobehavioral differences of autism, with clear translational implications. Collaborations among different institutions are strongly encouraged. SFARI will consider funding a limited number of Collaboration proposals. As such, the proposal must provide a strong rationale for how synergies across multiple disciplines will be leveraged.

## Application Deadline May 4, 2023

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### Maximum Budget

Explorer Track \$500,000 up to two (2) years

Expansion Track \$900,000 up to three (3) years

Collaboration Track \$750,000 *per lab* up to three years

### Important Dates

- Application Available  
February 28, 2023
- Informational Session  
March 7, 2023
- Application Deadline  
May 4, 2023
- Award Notification  
Late August 2023
  
- Award Start Dates  
October 1, 2023  
November 1, 2023  
December 1, 2023

## Contact Info

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Monday–Friday: 9:00 a.m.–5:00 p.m. ET

## SFARI Mission

The mission of the Simons Foundation Autism Research Initiative (SFARI) is to improve the understanding, diagnosis and treatment of autism spectrum disorders (ASD) by funding innovative research of the highest quality and relevance.

## Background and Objective

The objective of the Human Cognitive and Behavioral RFA is to better understand the cognitive and behavioral foundations of ASD, and to support basic science studies in humans with clear value for improving outcome measures and treatment options. In 2021 and 2022, SFARI has awarded \$13.1 million to fund [twenty-one projects](#) on cognition and behavior in ASD. In 2023, SFARI is expanding our commitment to this RFA by adding an additional budgetary track: a Collaboration track of up to \$750,000 per lab, for up to four (4) labs, over a period of up to three (3) years. Collaboration proposals should be built around transdisciplinary teams tackling a critical issue in the neurobehavioral differences of autism with clear translational implications.

Collaborations among different institutions are strongly encouraged. Such proposals must also provide a strong rationale for how synergies across multiple disciplines will be leveraged. SFARI will consider

funding a limited number of Collaboration proposals. More details about the types of proposals that are appropriate for the Collaboration track are outlined below.

## Scientific Priorities and Scope

The Human Cognitive and Behavioral Science RFA prioritizes research that produces foundational knowledge about the neurobehavioral differences associated with ASD. These projects are expected to inform or relate to the development and refinement of tools needed for translational efforts, such as biomarkers and outcome measures. Special emphasis is placed on objective, quantitative measures that may be used in conjunction with standardized clinical measures and genomic information to better characterize phenotypic and neurobiological variability within and across individuals with ASD.

We encourage studies that capitalize on approaches that are informed by recent advances in computer vision, machine learning and speech processing, as well as psychophysics and non-invasive neuroscience techniques (e.g., EEG and MRI). SFARI has a strong interest in developmentally focused studies in areas that include, but are not limited to, communicative, social and ritualistic/stereotyped behavior, as well as sensory and motor function. SFARI also recognizes the importance of domains of function, such as attention, learning and memory, and sleep, in influencing core ASD diagnostic domains. While applications may propose laboratory-based measures, we are especially interested in real-world, scalable and quantitative measures of behavior (e.g., wearable devices and other methods of digital phenotyping).

We also encourage proposals that not only quantify specific phenotypes, but also may contribute to the development of scalable innovative technologies for improving interventions and supports in humans. Successful applications would include a clear rationale for how the digital technology could be deployed to increase, maintain, or improve quantifiable functional outcomes in individuals with autism; for example, machine learning approaches that could amplify measurable gains from intensive behavioral interventions would be of interest.

In previous versions of this RFA, SFARI received applications that had strong reviewer support in the computational aspects of the proposal but were lacking clinical expertise. Principal investigators (PIs) who do not have substantial expertise with ASD participants should include a close collaborator(s) with such expertise as an additional PI(s) on their grant application or seek advice from appropriate experts.

Applications will be judged on the openness of the proposal's data-sharing plan. SFARI encourages applicants to include tools that will improve data transparency and accountability, such as [Datasheets for Datasets](#) and [Model Cards for Model Reporting](#). SFARI encourages applicants to describe not only how the data will be shared but also how any tools created in their study could be openly shared and utilized by other researchers in the future.

SFARI considers the following as out-of-scope for this RFA: studies with a primary focus on developing new clinical rating scales, or survey-based assessments, or online adaptations of traditional paper and pencil tests or existing assessments, such as cognitive (IQ) or social-cognitive tests. In addition, we discourage applications with a primary focus on psychosocial factors, or those proposing interventional clinical trials. Applications primarily focused on infrastructure or recruitment support of cohorts would also be considered unresponsive.

## Level and Duration of Funding

To enhance support of projects all along the continuum of translation, SFARI now offers three tracks within this RFA solicitation: Explorer, Expansion and Collaboration tracks. Applicants should select which track best matches the maturity and goals of their research proposal, as review criteria will be appropriately tailored for each track.

### *Explorer track*

This track is appropriate for early-stage projects in which establishing feasibility and proof-of-concept are the most relevant outcomes of the grant period. The total budget is \$500,000 or less, inclusive of 20

percent indirect costs, over a period of up to two (2) years. Allowable indirect costs to the primary institution for subcontracts are not included in the \$500,000 total budget threshold (see [grant policies](#)).

#### *Expansion track*

This track is appropriate for more mature projects with evidence of feasibility and preliminary validity, for which goals such as scalability, generalizability and/or more complete measure validation are now the most relevant translational outcomes. The total budget is \$900,000 or less, inclusive of 20 percent indirect costs, over a period of up to three (3) years. Allowable indirect costs to the primary institution for subcontracts are not included in the \$900,000 total budget threshold.

As with all SFARI-funded projects, it is at the foundation's discretion to modify final budgets and scientific scope as needed. Grant progress will be critically evaluated at the end of each annual funding period before support for the upcoming year will be approved.

#### *Collaboration track*

This track is appropriate for multi-lab, cross-institutional collaborative projects. Collaborative proposals should be built around transdisciplinary teams tackling a critical issue in the neurobehavioral differences of autism with clear translational implications.

Collaborations among different institutions are strongly encouraged. As stated above, SFARI will consider funding a limited number of Collaboration proposals. As such, the proposal must provide a strong rationale for how synergies across multiple disciplines will be leveraged. The total budget per collaborating lab is \$750,000 or less inclusive of 20 percent indirect costs, for up to four (4) labs, over a period of up to three (3) years. Allowable indirect costs to the primary institution for subcontracts are not included in the \$750,000 total budget threshold (see [grant policies](#)). We welcome applications from up to four collaborating PIs. As with all SFARI-funded projects, it is at the foundation's discretion to modify final budgets and scientific scope as needed. Grant progress will be critically evaluated at the end of

each annual funding period before support for the upcoming year will be approved.

## Participant Recruitment and Sample Sizes

Given the heterogeneity and multifactorial causes of ASD, SFARI places a premium on the use of well-characterized and sufficiently powered cohorts. SFARI is particularly interested in research study designs that stratify participants by genetic etiologies or other biologically meaningful criteria.

To facilitate recruitment of cohorts with well-characterized ASD and associated neurodevelopmental disabilities, SFARI has developed the Research Match program. Research Match is a robust in-house program to help investigators recruit participants from Simons collections, including [SPARK](#) and [Simons Searchlight](#). RFA applicants are strongly encouraged, but not required, to use Research Match as part of their participation recruitment strategy.

### *[SPARK Research Match](#)*

SPARK Research Match is a service that matches researchers with participants from SPARK, a landmark genetic research project with over 100,000 individuals diagnosed with autism, plus their biological family members. A summary of participants and available data is listed [here](#). To date, SPARK Research Match has supported over 160 studies with SPARK families, ranging from validation of remote novel measurements in very large samples to local laboratory neuroimaging and treatment protocols. A downloadable list of Research Match studies to date is [here](#).

### *[Simons Searchlight Research Match](#)*

This service matches researchers with participants with rare genetic conditions associated with ASD. Our unique Simons Searchlight communities include individuals with high-support needs, who are historically underrepresented in research studies, but for whom clinical impact may be particularly meaningful. Examples of potentially impactful studies might include quantitative investigations of communication, motor function or sleep. Previous Research Match

projects have included psychophysics experiments, novel eye tracking-based measures and genetic research. To facilitate future research on these rare conditions, SFARI is able to link researchers to in-person pilot data collection opportunities through supported patient advocacy organization conferences throughout the year.

Any research study that uses Research Match will be required to share data back with SFARI, to enhance the database. This will include participation data as well as study-specific data.

## Eligibility

All applicants and key collaborators must hold a Ph.D., M.D. or equivalent degree and have a faculty position or the equivalent at a college, university, medical school or other research facility.

Applications may be submitted by domestic and foreign nonprofit organizations; public and private institutions, such as colleges, universities, hospitals, laboratories and units of state and local government; and eligible agencies of the federal government. There are no citizenship or country requirements.

## Resubmissions and Multiple Applications

Unsuccessful applications submitted to previous SFARI RFAs may be resubmitted to this RFA, if relevant. For all resubmissions, we ask PIs to submit a statement of changes describing substantive changes to the application since the previous submission. If the previous application was externally reviewed, this document should include point-by-point responses to the reviewers' critiques. If the revised application does not include substantive changes, it is unlikely that the outcome will change. This is especially true for applications that were not externally reviewed, as this decision is often based on the relevance of the project to SFARI's mission.

Investigators may submit multiple applications on different topics. However, it is highly unlikely that two awards will be made to the same PI within one RFA cycle.

## Instructions for Submission

Applications must be submitted via the [Simons Award Manager \(SAM\)](#). Please click on the Funding Opportunities icon and navigate to the Simons Foundation Autism Research Initiative — Human Cognitive and Behavioral Science call. Click the Create Application button to begin. Applications should be started and submitted under the applicant's own account in SAM.

Details concerning application requirements and submission can be found in our How to Apply and FAQ sections.

## Informational Sessions for Potential Applicants

The Simons Foundation will host an informational session on the scientific content of the RFA with members of the SFARI science team on Tuesday, March 7, 2023, at 1:00 p.m ET. Click [here](#) to register.

Additionally, informational videos on submitting applications in SAM can be found [here](#).

## Our Commitment to Diversity, Equity and Inclusion

Many of the greatest ideas and discoveries come from a diverse mix of minds, backgrounds and experiences. The Simons Foundation is committed to grantmaking that inspires and supports greater diversity and inclusiveness by cultivating a funding environment that ensures representation of all identities and differences and equitable access to information and resources for all applicants and grantees.

The Simons Foundation provides equal opportunities to all applicants for funding without regard to race, religion, color, age, sex, pregnancy, national origin, sexual orientation, gender identity, genetic disposition, neurodiversity, disability, veteran status or any other protected category under federal, state and local law. The foundation also funds programs directed at supporting scientists from disadvantaged backgrounds or underrepresented groups, often working closely with professional societies and other funding agencies.

Of particular relevance to the Human Cognitive and Behavioral Science Award program, applicants are also encouraged to consider the [SPARK Research Match Diversity, Equity and Inclusivity \(DEI\) request for applications \(RFA\)](#), which aims to address historic disparities in research participation by Black or African American individuals.

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