SFARI Informational Event:

2021 Human Cognitive and Behavioral Science RFA

Pamela Feliciano, LeeAnne Green Snyder, Alice Luo Clayton, Paul Wang

March 24, 2021
Panelists

Pamela Feliciano, PhD
Scientific Director, SPARK

LeeAnne Green Snyder, PhD
Clinical Research Scientist, SPARK

Alice Luo Clayton, PhD
Senior Scientist, SFARI

Paul Wang, MD
Deputy Director, Clinical Research Associates
Simons Foundation Autism Research Initiative (SFARI)

- Largest private funder of autism research in the U.S.
- SFARI issued its first RFA in 2007
- > 450 investigators worldwide

- 2020 budget: $93 million overall
  - Cohorts and genetic sequencing (SPARK, Simons Searchlight)
  - Research resources (Autism BrainNet, Data Informatic Tools)
  - RFA grant funding: $19 million
Human Cognitive and Behavioral Science RFA

Applications due: May 3, 2021

Funding decisions: Early August

Budget: $750,000 over 3 years

Goal: To produce foundational knowledge about neurobehavioral differences associated with ASD, which will directly inform the development or refinement of tools needed for translational efforts, such as biomarkers and outcome measures.
Areas of Focus

**Clinically Meaningful Domains of Function**

- Social communication
- Ritualistic/stereotyped behavior
- Sensory and motor function

**Quantitative and Objective Measures of Human Behavior and Neurobiology and Behavior**

- Psychophysics
- Wearables and app-based data collection
- Computer vision and machine learning
- EEG, MRI, MEG
Areas of Focus

Towards Scalability and Generalizability

- Addresses suitability by ASD subgroups (IQ, age, etc.)
- Use under naturalistic/ecological conditions
- Utility for translational/clinical studies (patient stratify vs. biomarker vs. outcome measure)

Out of Scope:

- New clinical rating scales of survey-based assessments or online adaptations of traditional paper and pencil tests
- Interventional clinical trials or medical treatments
- Psychosocial factors
Detection of eye contact with deep neural networks is as accurate as human experts

Eunji Chong1, Elysha Clark-Whitney2, Audrey Southerland1, Elizabeth Stubbs1, Chanel Miller1, Eliana L. Ajdan2, Melanie R. Silverman2, Catherine Lord3, Agata Rozga4, Rebecca M. Jones2 & James M. Rehg1

NATURE COMMUNICATIONS | https://doi.org/10.1038/s41467-020-19712-x

Reduced Sensory Habitation in Autism and Its Correlation with Behavioral Measures

Wasifa Jamal1, Annie Cardinaux1, Amanda J. Hasks1,2, Margaret Kjelgaard1,3,4, Pawan Sinha1

Journal of Autism and Developmental Disorders
https://doi.org/10.1007/s10803-020-04780-1

Slower Binocular Rivalry in the Autistic Brain

Alina Spiegel,1 Jeff Menth,2,3 Amanda J. Haskins,2 and Caroline E. Robertson1,4,4

1School of Medicine, Johns Hopkins University, Baltimore, MD 21205, USA
2Department of Psychological and Brain Sciences, Dartmouth College, Hanover, NH 03755, USA
3Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA 02139, USA

Current Biology 29, 2948–2953, September 9, 2019
https://doi.org/10.1016/j.cub.2019.07.006
Additional Considerations

• Requested budgets should be scaled to fit the scope and maturity of the project
  up to $750,000 over 3 years

• Strong emphasis on well characterized and sufficiently powered cohorts

  Applicants are encouraged, but not required to use
  SFARI Research Match for participant recruitment
Recruit 50,000 families with ASD, collect phenotypic & genetic info

Return genetic results (~10%) so participants can be grouped by genetic similarities or phenotypic traits

Invite participants with genetic diagnoses into Searchlight

(Formerly Simons VIP)

Match participants to research studies

base.sfari.org
# Demographics and available data for the SPARK cohort (as of Dec 2020)

Total number of consented participants = 251,082

<table>
<thead>
<tr>
<th>Individuals with ASD</th>
<th>Children (n=84,005)</th>
<th>Adults (n=15,304)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at enrollment in years, mean (SD)</td>
<td>8.1 (4.3)</td>
<td>27.4 (10.3)</td>
</tr>
<tr>
<td>Sex at birth, n (%)</td>
<td>Male</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>22%</td>
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</table>

<table>
<thead>
<tr>
<th>Measure / File</th>
<th>Version 5 (Dec 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals-Registration</td>
<td>251,082</td>
</tr>
<tr>
<td>RBS-R</td>
<td>36,300</td>
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<tr>
<td>SCQ</td>
<td>69,305</td>
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<tr>
<td>Basic Medical</td>
<td>146,843</td>
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<tr>
<td>Background History</td>
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<tr>
<td>Child</td>
<td>37,141</td>
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<tr>
<td>Adult</td>
<td>3,199</td>
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<tr>
<td>Sibling</td>
<td>15,518</td>
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<tr>
<td>Roles Index</td>
<td>99,422</td>
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<tr>
<td>DCDQ</td>
<td>26,969</td>
</tr>
<tr>
<td>Vineland</td>
<td>11,558 NEW!</td>
</tr>
<tr>
<td>Core Descriptive Variables</td>
<td>99,422 NEW!</td>
</tr>
<tr>
<td>IQ</td>
<td>2,278 NEW!</td>
</tr>
</tbody>
</table>
Research Match: Connecting families with other research opportunities

1. Hear about other research studies
2. Decide if you want to participate
3. Study data leads to new findings
4. Receive summary report of study results
Research Match Summary

- Provides researchers with free access to 100,000+ people with ASD and their available family members, including 1,000+ with specific genetic etiologies
- Supported recruitment into 74 research studies since 2017
- More than 33,676 unique SPARK families have participated in a research match study
- Any researcher can apply https://base.sfari.org/
2021 Human Cognitive and Behavioral Science RFA

Contact Info

Scientific inquiries:
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646-654-0066

Administrative inquiries:
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646-654-0066

Simons collections inquiries:
collections@sfari.org
646-654-0066

Important Dates

Application Available
March 1, 2021

Informational Zoom Meeting
March 24, 2021

Application Deadline
May 3, 2021

Award Notification
August 2021

Award Start Dates
September 1, 2021
October 1, 2021
November 1, 2021