

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

Simons Foundation

Grant-making Groups

SFARI

Math and
Physical
Sciences

Life
Sciences

Education
&
Outreach

Flatiron Institute

Center for
Computational
Astrophysics

Center for
Computational
Biology

Center for
Computational
Mathematics

Center for
Computational
Neuroscience

Center for
Computational
Quantum
Physics

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

Scientific Examples

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. Ajodan², Melanie R. Silverman², Catherine Lord³, Agata Rozga¹ , Rebecca M. Jones² & James M. Rehg¹

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

Reduced Sensory Habituation in Autism and Its Correlation with Behavioral Measures

Wasifa Jamal¹  · Annie Cardinaux¹ · Amanda J. Haskins^{1,2} · Margaret Kjelgaard^{1,3,4} · 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 Mentch,^{2,3} Amanda J. Haskins,² and Caroline E. Robertson^{2,4,*}

¹School of Medicine, Johns Hopkins University, Baltimore, MD 21205, USA

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Current Biology 29, 2948–2953, September 9, 2019

<https://doi.org/10.1016/j.cub.2019.07.026>

Additional Considerations

- Requested budgets should be scaled to fit the scope and maturity of the project

up to \$750,000 over 3 years

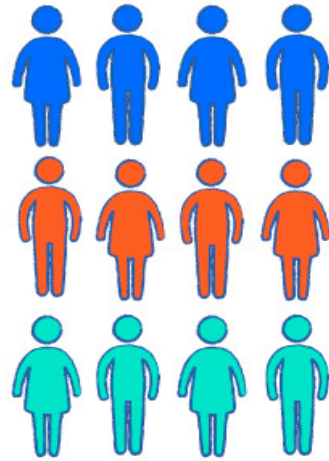
- Strong emphasis on well characterized and sufficiently powered cohorts

Applicants are encouraged, but not required to use
SFARI Research Match for participant recruitment

SPARK and Simons Searchlight



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



SIMONS
SEARCHLIGHT

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)

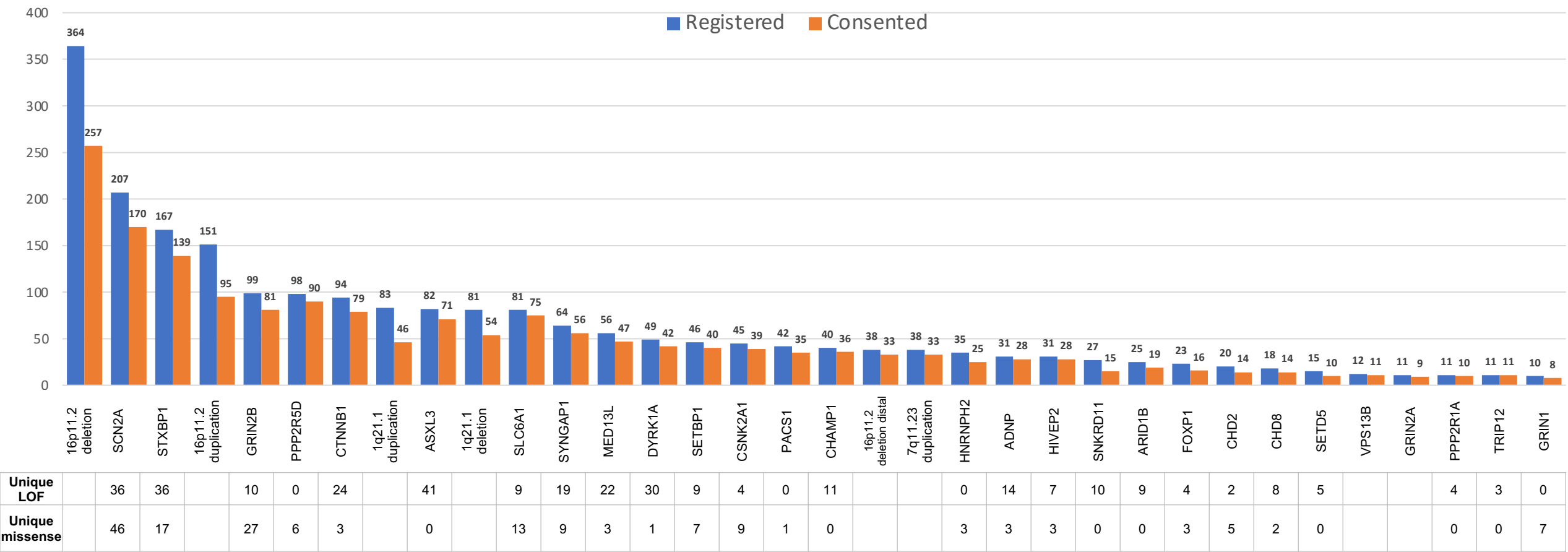
Total number of consented participants = 251,082

Individuals with ASD	Children (n=84,005)	Adults (n=15,304)
Age at enrollment in years, mean (SD)	8.1 (4.3)	27.4 (10.3)
Sex at birth, n (%)		
Male	78%	64%
Female	22%	36%

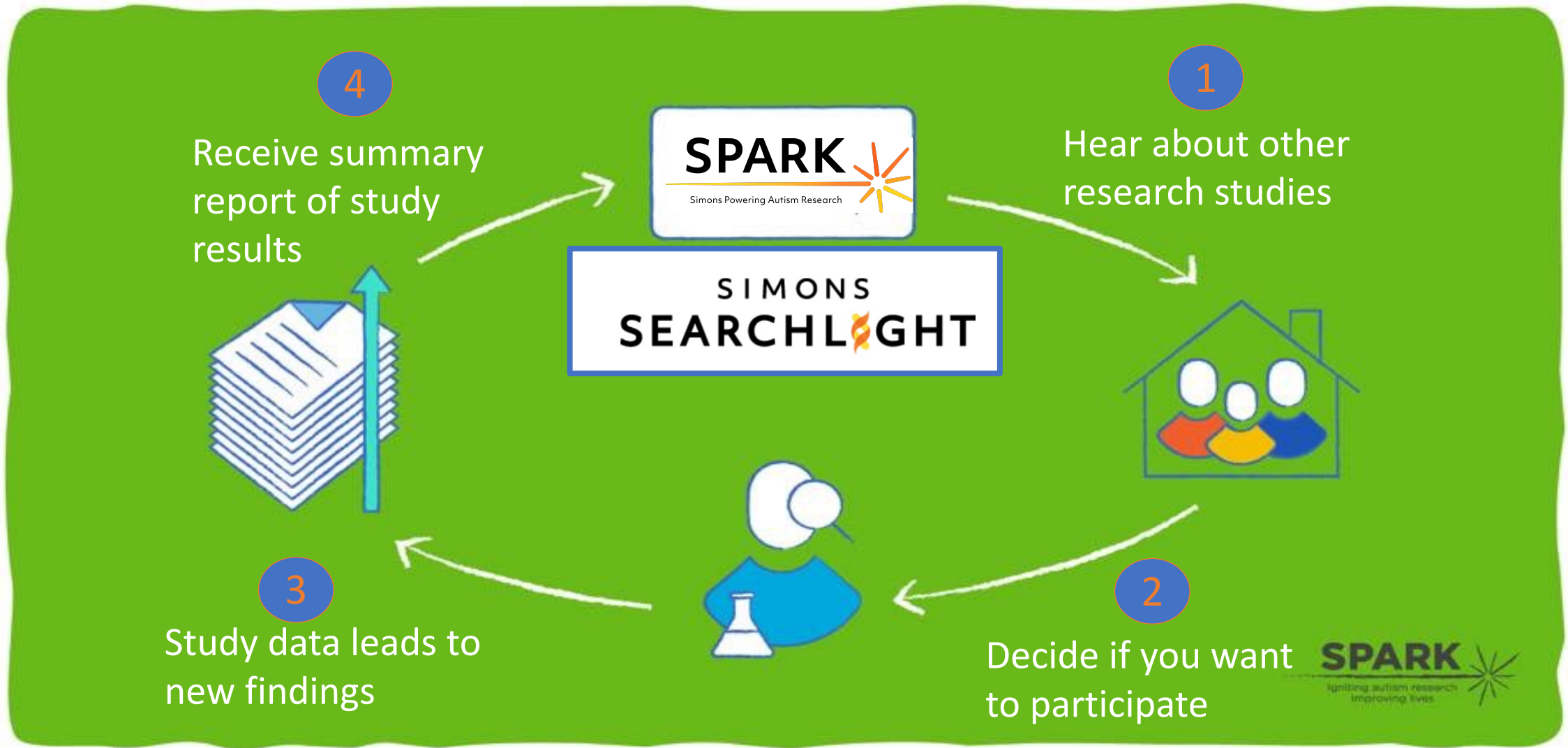
Measure / File	Version 5 (Dec 2020)
Individuals-Registration	251,082
RBS-R	36,300
SCQ	69,305
Basic Medical	146,843
Background History	
Child	37,141
Adult	3,199
Sibling	15,518
Roles Index	99,422
DCDQ	26,969
Vineland	11,558 NEW!
Core Descriptive Variables	99,422 NEW!
IQ	2,278 NEW!

Simons Searchlight Registered Genes

Simons Searchlight Top Genes
(10 or more registered families)

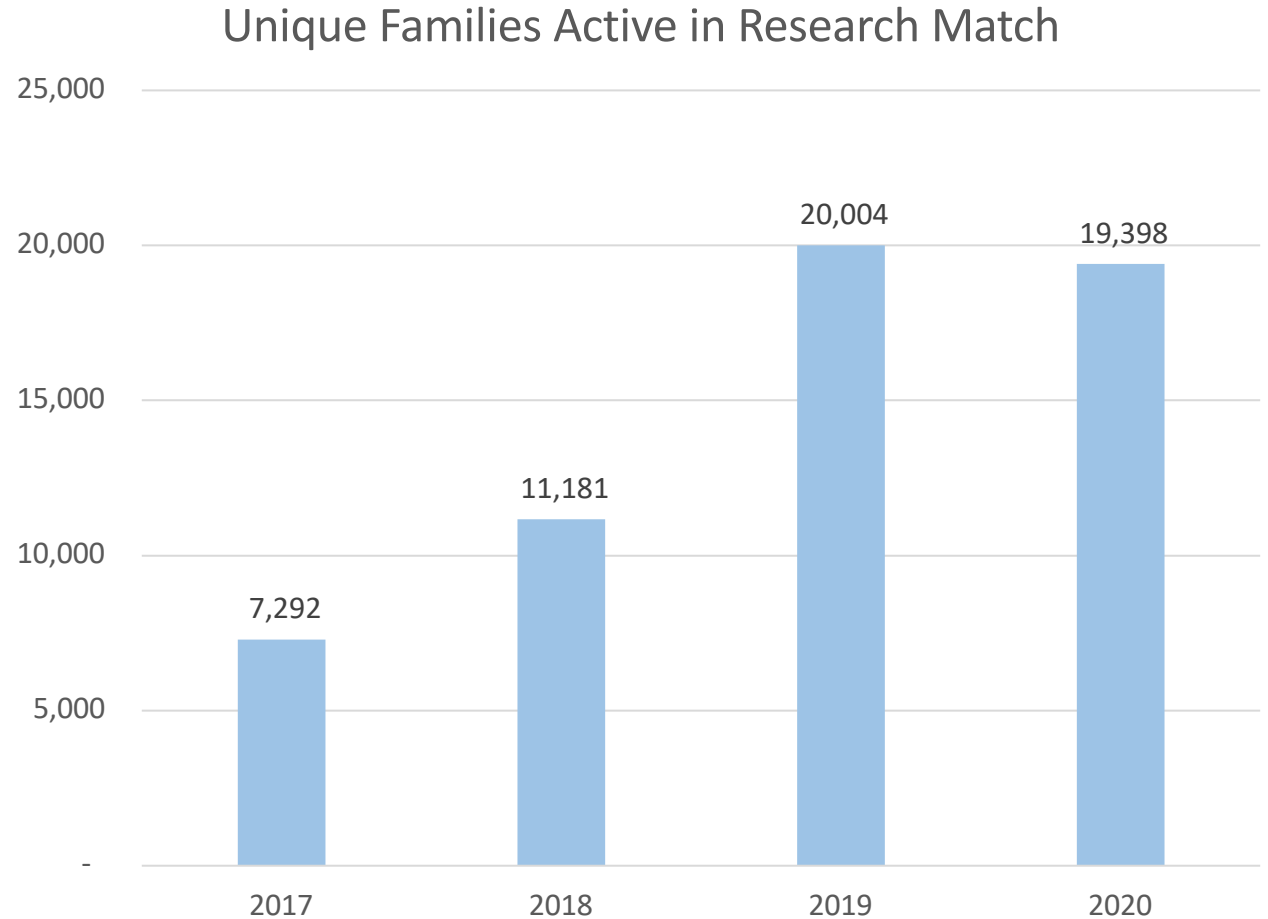


Research Match: Connecting families with other research opportunities



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

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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

