



PRESIDENT'S LETTER

Dear Friends:

There's no denying that 2022 was a year of important progress in the autism community. For the first time, the research and clinical communities recognized the term “profound autism” and ASF took the lead in advocating for this vulnerable population that has been left behind in the wake of the neurodiversity movement. We expanded our #ThisIsProfoundAutism awareness campaign by publishing a booklet that features the stories of people impacted by profound autism and created a new grant mechanism to fund pilot studies intended to aid this underserved group.

The grants we funded this year addressed the most urgent questions from the families we serve, including: How can we translate the basic science we have into early prevention strategies; how can we measure the benefit of intervention; what mechanisms can we develop to re-open learning plasticity; and how can we better understand developmental trajectories so that we can provide the right intervention to each person.

This year I was also personally proud that we launched the Suzanne Wright Memorial Accelerator Awards to honor the dynamic Autism Speaks co-founder who passed away in 2016. Suzanne was a fierce advocate who empowered a new generation of parents to fight for their children’s rights. The accelerator awards are supplemental grants designed to speed the pace of existing studies. Suzanne was famous for wanting things done yesterday and I know she would be proud of this new mechanism.

As you read the following pages about our progress, please remember that without your continued participation and support none of this work would be possible. Thank you for your faith in us. We look forward to another year of progress, both in the lab and in the lives of those we strive to help every day.

With gratitude,

Alison Singer | President, Autism Science Foundation

CHIEF SCIENCE OFFICER'S LETTER

Dear Friends:

The grants we awarded not just this year but in previous years have led to important discoveries that are helping families. You can read more about some of them on the back page of this report. As critical as these grants are, they are not the only way ASF is making a difference in science.

This year, as part of the Alliance for Genetic Etiologies for Neurodevelopmental Disorders and Autism (AGEDNA) that ASF manages, we co-organized the first meeting focused on gastrointestinal problems in those with rare genetic disorders associated with autism. While it is not a core feature of autism, GI problems plague up to 90% of individuals with a diagnosis and can be debilitating, painful, and sometimes lethal.

Another one of our initiatives, the Baby Siblings Research Consortium, brings 50 investigators from around the world to study the earliest biological and behavioral features of ASD. To improve the group’s ability to share data, ASF invested in building a state-of-the-art database. These shared informatics efforts will lead to a better understanding of early predictors of language ability in those with an autism diagnosis.

We also know that participating in research can sometimes be time consuming, exhausting, and just a flat out inconvenience. Because you are so important to helping scientists understand your family and others, we created a mechanism to match you and your family with the right research study, depending on your age, location, and interest. This new “Participate in Research” directory is now on our website. I hope you take a look, because whether online or in person, these studies don’t just help the community, they can also help you access services.

These are just a few of the projects that ASF led thanks to your support. Each year, the science gets better and the discoveries pour in. Please read our 2022 year end research roundup (link here?) for all of the important science that you helped make happen this year.



ACCOMPLISHMENTS

IN 2022, THE AUTISM SCIENCE FOUNDATION:



PROFOUND AUTISM GRANTEES:

This year, ASF launched the first-of-its-kind profound autism grants to support autistic people at the severe end of the broad autism spectrum who are demonstrably underrepresented in research. These pilot grants were introduced less than a year after The Lancet Commission on the Future of Care and Clinical Research in Autism formally introduced the term “profound autism” and called for targeted research for this underserved population.

The new funding mechanism was launched after families impacted by profound autism urged ASF to fund work to understand the causes of profound autism and develop new interventions that will improve the quality of life for this vulnerable group.

GRANT RECIPIENTS

Charlotte DiStefano, Ph.D. | Children’s Hospital of Los Angeles



Improving Access to Communication Systems Among Those with Profound Autism in Diverse Communities

Individuals with profound autism may use a number of methods to try to communicate, including augmentative and alternative communication (AAC) systems. These systems range from pictures and communication boards to speech-generating devices and iPads and have been shown to improve overall communication and promote spoken language development. However, these AAC systems are not always accessible to all families. Utilizing the population of patients at the Children’s Hospital of Los Angeles (of which 40% are uninsured and 65% are from an ethnically diverse background), this study will examine factors influencing access to and use of AAC systems.

Dimitrios Mylonas, Ph.D. | Massachusetts General Hospital



Testing a Novel Device to Study Sleep at Home in Children with Profound Autism

Sleep problems are highly prevalent in individuals with profound autism and exacerbate emotional disturbances, cognitive deficits, and challenging behaviors. Existing studies of sleep in autism have mostly excluded children with profound autism. This omission has been blamed on the added burden, expense, and difficulty of studying sleep in children with profound autism in a lab setting. This grant will expand a sleep study currently in progress to add a cohort of children with profound autism. The goal of the study is to validate the use of a minimally invasive headband device that measures sleep quality at home and provides data on specific brainwave patterns during different phases of sleep in people with autism vs. people without autism.

Sheng-Nan Qiao, Ph.D. | Yale University



Modeling Neuroinflammation and Neuropsychiatric Regression in Profound Autism

Individuals with profound autism may sometimes exhibit neuropsychiatric regression, which can include catatonia, hyper aggression, and cognitive decline. This regression has been linked to infection in girls with Phelan McDermid Syndrome, a genetic condition associated with profound autism. There is some preliminary evidence linking the administration of anti-inflammatory drugs to the reversal of this regression. This animal model study will look at whether mice with the genetic mutation associated with Phelan McDermid Syndrome are more susceptible to the effects of inflammation-inducing drugs, and whether these effects can be mediated by inflammation-reducing drugs.

This project is co-sponsored by CureShank and the Phelan-McDermid Syndrome Foundation

Giacomo Vivanti, Ph.D. | Drexel University



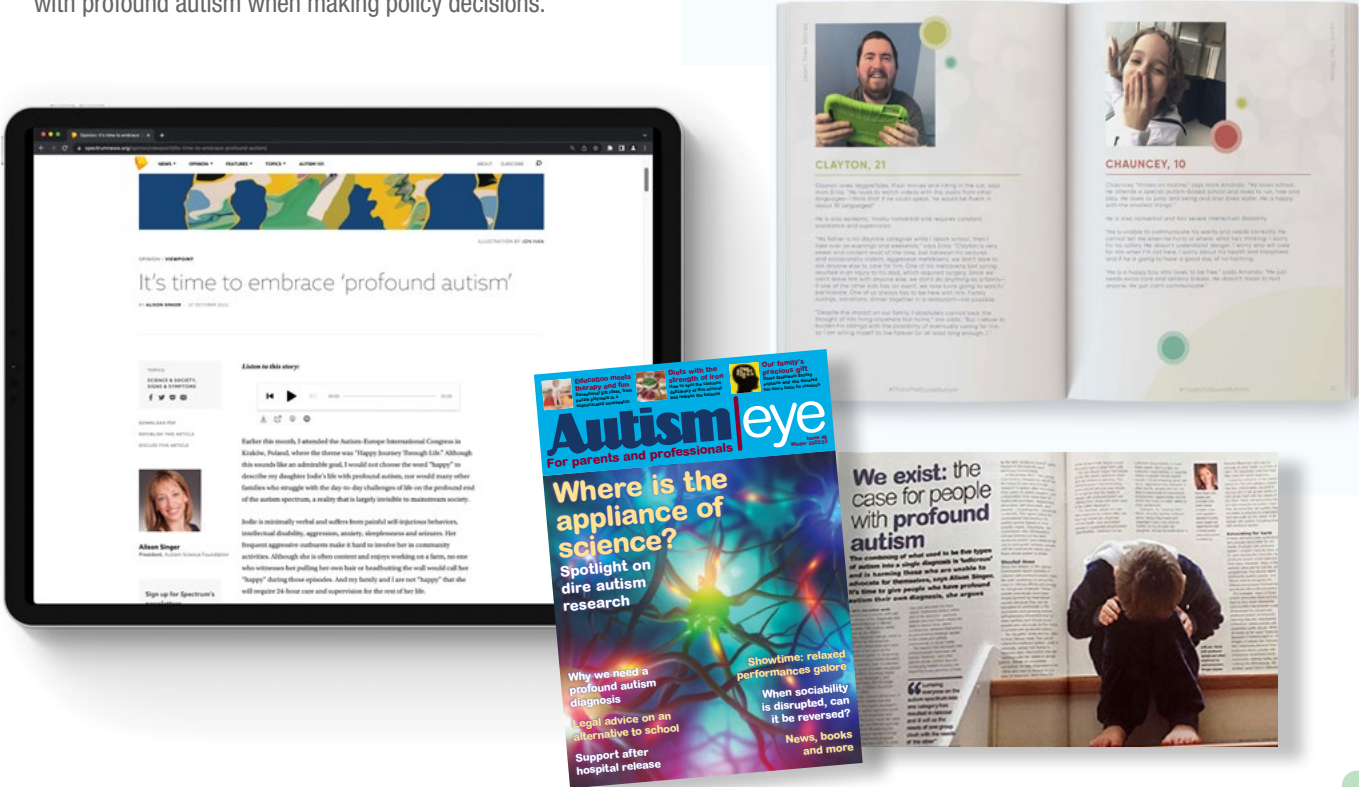
Examining the Relationship between Self Injurious Behavior and Medical Conditions in People with Profound Autism

Self-injurious behaviors such as headbanging, scratching, and biting are common in individuals with profound autism but are poorly understood. Some of these behaviors may be responses to pain or discomfort caused by a pre-existing medical condition or unmet medical need, but this is difficult to assess in those with a limited ability to communicate. As a consequence, the medical needs of people with profound autism may not always be identified through routine healthcare visits. Working with a large residential and day program service provider, this study will examine the relationship between medical conditions and self-injurious behaviors, and determine whether interventions addressing medical conditions could alleviate self-injurious behaviors. This project will also assess the feasibility, acceptability, and effectiveness of a new protocol designed to facilitate successful healthcare visits for people with profound autism.

PROFOUND AUTISM ADVOCACY

ASF emerged as a global leader in profound autism advocacy after the release of the December 2021 Lancet Commission report formally recognizing the term “profound autism” for the first time in a peer-reviewed medical journal. ASF’s successful #ThisIsProfoundAutism social media campaign led to the publication of the #ThisIsProfoundAutism booklet this fall, which movingly highlights stories of people with profound autism and calls on legislators and other decision-makers to consider people with profound autism when making policy decisions.

In October, ASF President Alison Singer wrote an op-ed for Spectrum titled “It’s Time to Embrace Profound Autism,” that went viral. It called for re-bifurcating the diagnosis ‘autism spectrum disorder’ and adding a new diagnosis of ‘profound autism’ to better aid this vulnerable and underserved population. Another op-ed, this one published in the U.K.-based Autism Eye titled “It’s Time to Make ‘Profound Autism’ Its Own Diagnosis.”



PREDOCTORAL GRANTS

ASF awarded seven predoctoral fellowships and two postdoctoral grants to early-career researchers in 2022. ASF has a longstanding commitment to supporting researchers at the start of their careers. Their passion and dedication will continue to propel the field forward and their work is poised to tangibly improve the lives of people with autism.

PREDOCTORAL FELLOWSHIP GRANT RECIPIENTS:



Viktoria Haghani | University of California at Davis
Mentor: Janine LaSalle, Ph.D. | Advisor: Ian Korf, Ph.D.

Clarifying the Role of the MeCP2 Gene in the Timing of Symptom Progression in Rett Syndrome
This study is looking closely at changes in MeCP2 binding and how it regulates gene expression by isolating different types of neurons at different ages to determine which are critical in the progression of symptoms.



Emily Isenstein | University of Rochester
Mentor: John Foxe, Ph.D. | Advisor: Duje Tadin, Ph.D.

Understanding Hyper-Responsiveness to Touch in the Autistic Brain
This project is examining how the autistic brain responds to different types of touch, ultimately providing a biological basis for determining why some touch is avoided while some is sought out, which could improve therapy for dangerous self-stimulatory behaviors.



Steven Pastore | University of Toronto
Mentor: John Vincent, Ph.D. | Advisor: Karun Singh, Ph.D.

Novel Methods to Understand the Function of Autism Risk Gene PTCHD1
This study is the first-ever attempt to determine the function of the PTCHD1 protein in its natural biological setting. This will enhance our understanding of how this gene interacts with the rest of the brain and expand the range of therapeutic approaches intended to target specific types of dysfunction in people with autism.



April Pruitt | Yale University
Mentor: Kristen Brennand, Ph.D. | Advisor: Ellen Hoffman, M.D., Ph.D.

Estrogen Exposure in Early Development as a Factor in ASD Sex Bias
This gene-by-environment study will help identify the role of estrogen during development as a component in the later biological and behavioral features of females compared to males with autism.



Nicole Rosen | University of California at Los Angeles
Mentor: Catherine Lord, Ph.D. | Advisor: Marsha Mailick, Ph.D.

Sibling Influence on Adaptive Behavior in Individuals with ASD
This project leverages existing data from about 5,000 families across multiple longitudinal studies to understand the role of a sibling in longer-term adaptive behavior, and to better identify specific factors that may influence this benefit. Findings from this research may inform intervention planning to maximize adaptive skill development across time and optimize outcomes in those with autism.



Simona Sarafinowska | Washington University School of Medicine
Mentor: Joseph Dougherty, Ph.D. | Advisor: John Constantino, M.D.

Molecular and Cellular Origins of Sex-Specific Social Motivation Deficits in Autism
This study examines the role of a gene called MYT1L that has been linked to autism. This project will also examine social learning in males and females and count neurons to look for both behavioral and cellular changes. This will determine where in the brain sex-differential effects in social behavior originate, providing evidence for more targeted intervention strategies in males and females with autism.



Ellen Wilkinson | Rutgers University
Mentor: Vanessa Bal, Ph.D. | Advisors: Richard Hastings, Ph.D. and Andrew Jahoda, Ph.D.

Measuring Depression and Low Mood in Minimally-Verbal Autistic Adults: Establishing and Adapting Tools to Assess Emotional Well-Being
This study investigates the appropriateness of using surveys administered by a caregiver around depression and gathers information about behaviors that caregivers believe reflect low mood/depression. This project addresses a gap in mental health supports for minimally verbal autistic adults and will assist clinicians in determining which tools should be used for autistics who show signs of depression but cannot verbally communicate their feelings.

POSTDOCTORAL GRANTS

POSTDOCTORAL FELLOWSHIP GRANT RECIPIENTS:



Susan Kuo, Ph.D. | Broad Institute of MIT and Harvard
Mentor: Michael Talkowski, Ph.D. | Advisor: Somer Bishop, Ph.D.

Utilizing Developmental Milestones to Predict the Usefulness of Genetic Testing in People with Autism

This study utilizes machine learning to integrate genetic findings with the child’s attainment of key developmental milestones, because often milestone delays are associated with rare genetic disorders. Eventually, this research could lead to a brief, low-cost clinical prediction tool that increases the diagnostic certainty of genetic testing in autism.



Carissa Sirois, Ph.D. | University of Wisconsin at Madison
Mentor: Xinyu Zhao, Ph.D. | Advisor: Craig Erickson, Ph.D,

Developing Therapeutics for Autism and Fragile X Syndrome Based on Divergent Brainwave Patterns

This project involves collecting cells from individuals with Fragile X Syndrome and turning them into neurons. These cells are then tested for their own electrical activity, validating the brainwave data collected earlier. This study will then take the research a step further by examining if and how different therapeutics affect these neurons in different ways, leading to more targeted therapeutics.

SUZANNE WRIGHT MEMORIAL RESEARCH ACCELERATOR GRANTEES

In 2022, ASF renamed its accelerator grants in memory of pioneering autism advocate **Suzanne Wright**. Suzanne, who died in 2016, co-founded Autism Speaks in 2005 and raised millions of dollars to fund autism research and help families impacted by autism. These accelerator grants are intended to expand the scope, speed the progress, and increase the efficiency of active autism research grants.

GRANT RECIPIENTS:



Calliope Hologue, Ph.D. | Johns Hopkins University/ Kennedy Krieger Institute

Expediting Our Understanding of Gastrointestinal Issues in Autistic Adults

A current study is gathering input from a group of autistic adults in order to develop a set of recommendations for improving GI health in adults. This grant will provide funding to expedite data collection, analysis, and dissemination of the outcomes of this study so that results can be seen up to a year earlier.



Elizabeth Kaplan-Kahn, Ph.D. | The Children’s Hospital of Philadelphia
Advisor: Judith Miller, Ph.D.

Improving Quality of Life Measures for Minimally Verbal Autistic Children with Cognitive Disability

The Patient-Reported Outcomes Measurement Information System (PROMIS®) Autism Battery–Lifespan (PAB-L) is a recently developed instrument to measure autistic QoL across the lifespan. This grant will expand the research on the PAB-L to examine whether it is appropriate in those with profound autism and what changes should be made to better serve this population.



Yael G. Dai, Ph.D. and Daina M. Tagavi, Ph.D.
University of Massachusetts, Boston
Advisors: Alice Carter, Ph.D. Boston University and Wendy Stone, Ph.D., University of Washington

Validating an Online Autism Diagnostic Tool

Researchers recently adapted an assessment protocol (the Communication Play Protocol; CPP), to be conducted as an online assessment of ASD (RISE-CPP). ASF’s funding allows researchers to determine if clinicians can diagnose ASD online using the RISE-CPP protocol as accurately as they can using traditional in-person assessments.

UNDERGRADUATE SUMMER RESEARCH GRANTS

For the ninth consecutive year, ASF has offered summer research grants to promising undergraduate scientists. This year's diverse group of grantees looked at a wide range of topics including sensory intolerance, parent-mediated interventions, and early intervention to support executive functioning, as well as the appropriateness of specific measurement tools in underserved communities.

GRANT RECIPIENTS



David Barrett | Vanderbilt University
Mentor: Tiffany Woynaroski, Ph.D., CCC-SLP | Advisor: Zachary Williams

Understanding the mechanisms of sensitivity to sound in ASD
This project expands on existing research at Vanderbilt looking at brain activity in autistic and non-autistic individuals with different levels of sound tolerance to understand the factors that play a role in the brain's response to noise.



Jessie Greateorex | Michigan State University
Mentor: Brooke Ingersoll, Ph.D., BCBA-D

Strengthening parent training in community mental health clinics
This fellow is working directly with ABA agencies that contract with Medicaid to determine how clinicians can better support parents participating in parent-mediated interventions.



Grace Hajjar | University of California at Los Angeles
Mentor: Catherine Lord, Ph.D.

Determining the effectiveness of the BOSCC in females and people of color
This study recruits women and individuals from racially and ethnically diverse communities to understand how a measure of treatment outcome, called the BOSCC (Brief Observation of Social Communication Change), can be used more effectively in these communities.



Chavely Gonzalez Ramirez | University of North Carolina at Chapel Hill
Mentor: Ben Philpot, Ph.D.

Understanding the expression of ASD Gene UBE3A in the Rhesus Macaque
To assure the safe targeting of therapeutic approaches to normalizing UBE3A levels in individuals with Dup15q Syndrome, this fellow will study UBE3A developmental expression in the closest proxy we can get to the human brain – the brain of the rhesus monkey.




Meagan Tsou | Boston Children's Hospital
Mentor: Susan Faja, Ph.D.

Examining the impact of early intervention on executive functioning
This project takes advantage of an existing longitudinal study to examine the specific role and active ingredients of early intervention from ages 2-4 on executive functioning. The fellow will also examine whether demographic factors, including race and ethnicity, play a role in the effectiveness of the intervention.


WEBSITE LAUNCH


ASF re-launched a comprehensive new website in February, which serves as a trusted resource for families, individuals with autism, autism advocates, scientists, service providers, donors, members of the media and the general public. Highlights of the new, modern site include:

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Evidence-based information **about autism**—what it is, early signs, what does (and does not) cause it and more.
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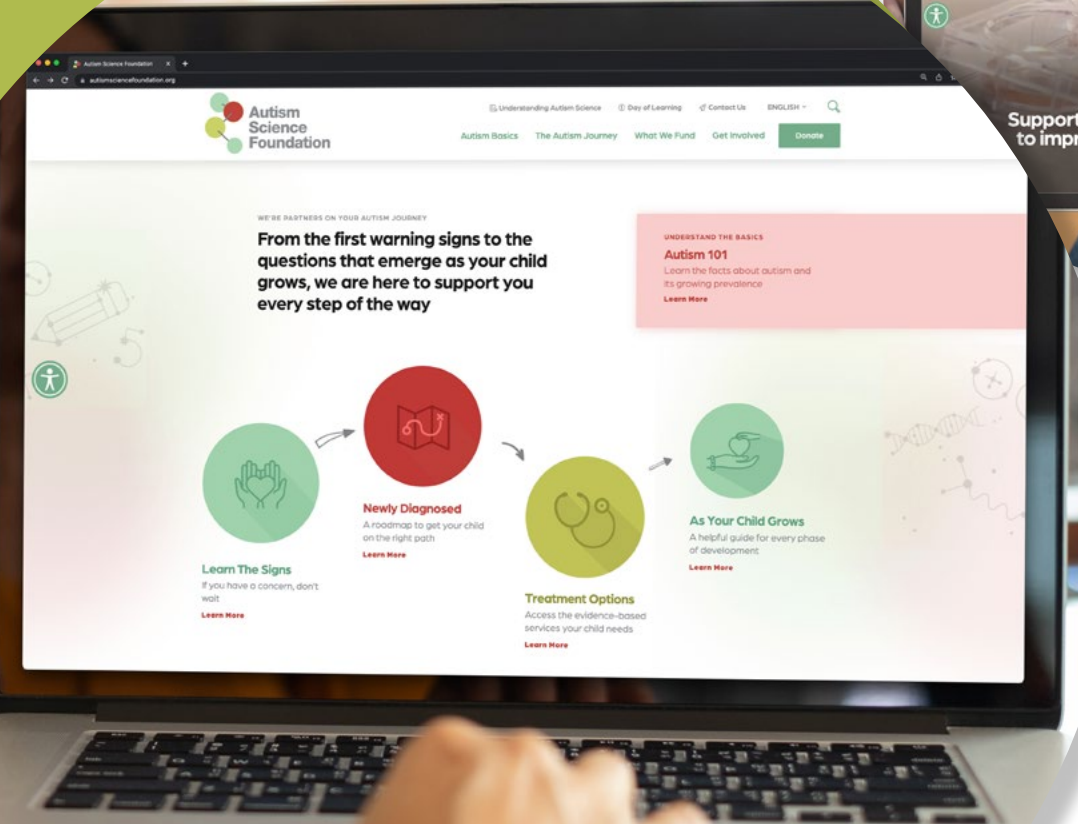
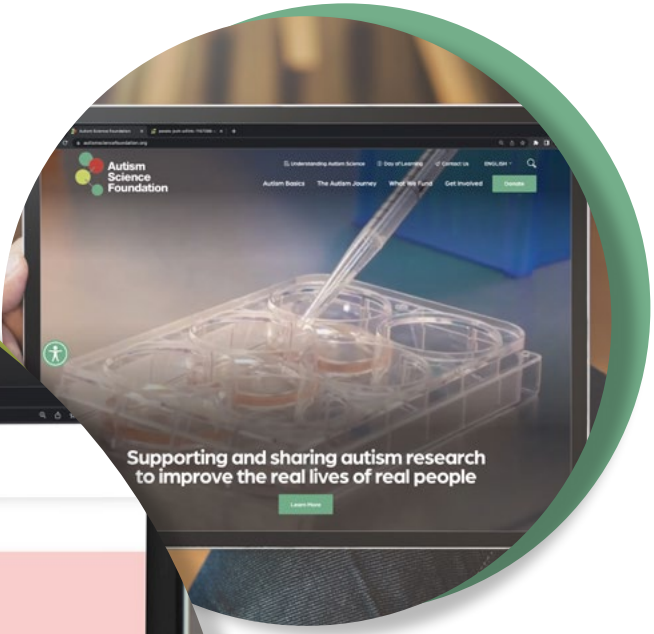
A roadmap for every phase of the **autism journey**, from steps to take after a diagnosis to how to support people with autism through adulthood.
- 

Information about **grant opportunities** for researchers—and how ASF-supported research has made a tangible impact.
- 

A **research directory** that highlights important research studies, as well as links to our weekly science podcast.
- 

Details about ASF-sponsored events, including our annual **Day of Learning**.
- 

Enhanced ADA accessibility and the ability to translate the site into 10 languages.



PARTICIPATE IN RESEARCH WEBSITE DIRECTORY

Scientific discoveries that help families with ASD are only possible when families themselves **participate in research studies**, but unfortunately many important autism research studies do not have enough participants, or a broad enough sample, to draw meaningful conclusions.

To address this, ASF created the novel **“Participate in Research” website directory**. This searchable directory is intended to match people with studies that fit the needs and interests of their families.

One of ASF’s goals is to develop resources the community needs but doesn’t yet have. This new directory is an important tool to increase involvement in research, speed up the pace of science and ultimately improve the lives of people with autism.

Families, caregivers, service providers and autistic adults can search the directory by:

- Age
- Topic of interest
- Geographical location
- Online participation or a hybrid of online and in-person involvement



Or search by keyword

Or narrow down your search...

For the purposes of participating in a research study, I am a...

Anyone

I want to find a research study for someone who is a/an...

All Ages

I live...

Anywhere

I am interested in participating via...

Both Online and In-person

I am interested in the following topics...

All Topics

Search Our Library

Reset



ASF is a primary funder of the BSRC, a group of scientists from 20 universities around the globe who are committed to researching the earliest signs of ASD, primarily by studying infants who have a diagnosed sibling and thus have a higher probability of a diagnosis.



More than 50 autism researchers attended the ASF-sponsored Baby Siblings Research Consortium meeting in Minneapolis in November. The ASF team left the meeting full of enthusiasm about the great work this group is doing, including moving closer to a biomarker-based, pre-symptomatic diagnosis of autism and expanding our definition of “high-risk” to include children with rare genetic disorders as well as premature infants.

The Next Gen Sibs project of the BSRC, which focuses on evaluating the offspring of non-autistic siblings, was expanded in 2022. Work focused on gathering input from more siblings so that their perspectives could be built into study designs. In 2023, we plan to expand the program adding sites in Canada and Northern California to the current sites in Atlanta and Los Angeles. Our goal is improve access to early diagnosis and clinical care for the next generation of infants at risk for autism.

The **BSRC website** has numerous resources for autism families, including a video library that answers common questions from families about issues related to the early signs of autism.



(CONSORTIUM FOR AUTISM, NEURODEVELOPMENT DISORDERS AND DIGESTIVE DISEASES)

Gastrointestinal problems can severely impact the quality of life for people with autism. To address this urgent issue, ASF played a leadership role in launching **CANDID**—the Consortium for Autism, Neurodevelopment Disorders and Digestive Diseases—in 2022. CANDID is a collaboration between patient advocacy groups, scientists, clinicians, and research organizations that is focused on addressing gastrointestinal dysfunction in patients with neurodevelopmental disorders including autism.

In June, CANDID held its first virtual conference, which drew over 200 participants. Speakers included people who experience the difficulties of GI distress in their own families, doctors who are leading the way in the treatment and diagnosis of GI dysfunction in people with neurodevelopmental disorders, and researchers in biology, neurology, and public health who discussed the need for new measures and diagnostic tools. Videos of the conference are available [online](#) for free.



ASF collaborated with Els for Autism to expand our Sam's Sibs Stick Together program, **which offers extra support for autism siblings, presents findings of research that focuses on siblings, and develops resources for siblings of all ages.** In 2022, the number of sibling participants grew by over 25%. All the webinars and virtual meetings are available [online](#).



ASF's Science Learning Series, launched in 2021, grew rapidly in 2022, providing more opportunities for scientists to connect with the community and share their most recent discoveries. Each webinar in the series is a 30-minute set of presentations with 30 minutes for families to ask questions. Topics covered this year included understanding brain activity in infants with autism, language development and improving social communication.

View free recordings of these webinars [online](#).

ASF'S IMPACT: READ OUR CASE STUDIES

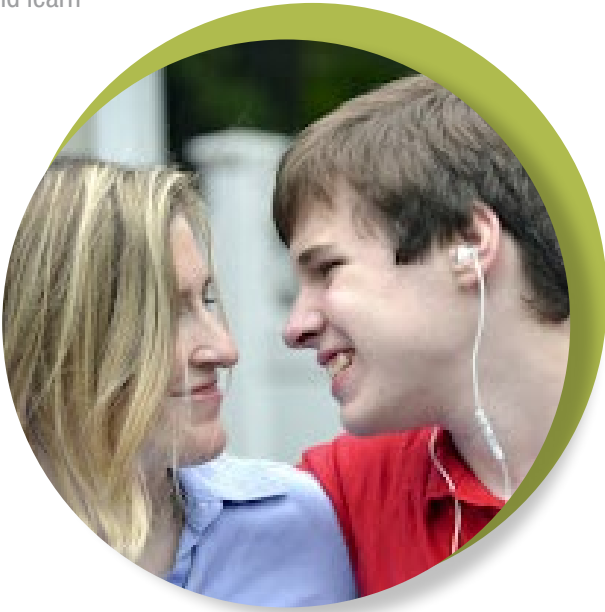
ASF was founded in 2009 to advance autism research and improve lives. Since then, the foundation has funded more than \$5 million in research that has improved our understanding of the causes of autism and has enhanced treatment. ASF's grants have helped improve the real lives of real people. Read three case studies to learn more about ASF's impact.

How ASF Has Played a Key Role in Understanding Gender Differences in Autism

The autism community has long known that boys are four times more likely than girls to be diagnosed with an autism spectrum disorder (ASD), but for many years the reasons why have eluded scientists. ASF played a key role in funding and supporting efforts to understand gender differences in autism and learn more about a suspected "female protective effect."

Research supported by ASF has unequivocally proven the existence of the "female protective effect," demonstrating that the brains of females and males with ASD work differently and that immune cells in the brain may be a critical link to the differences in males vs. females. The **Autism Sisters Project** has also provided clinical advice in situations in which genetic testing is a high priority for families.

As a result of the research initiated by ASF, millions of dollars in additional research funding has been allocated by other organizations, including the National Institutes of Health (NIH) and the Simons Foundation, to study gender differences in autism.



How ASF-Funded Research Led to a Better Understanding of Early Predictors of ASD

Early diagnosis and treatment are key to better long-term outcomes for people with autism, which is why ASF has led the way in funding scientific research that unlocks early predictors of autism in very young children. This important work has led to young children getting diagnosed earlier and more quickly receiving the treatments they need to thrive.

ASF currently funds the **Baby Siblings Research Consortium**, which pools information from more than 5,000 families across the world. Its findings have led to the determination that a younger sibling of a child with autism is much more likely to receive an autism diagnosis themselves, as well as providing critical information about early warning signs that can lead to diagnosis and intervention.

The BSRC has grown to over 50 investigators, launched six new analyses to understand the early signs and features of ASD, created a video library for families, developed an informational website and significantly expanded the database for even greater use by researchers.



How ASF-Funded Research Changed School-Based Interventions

ASF funding has helped to update the interventions students with autism receive in school and has also made treatment accessible to more families. With the support of teachers and school administrators, ASF has worked to test new interventions in the real world to ensure that they can be used effectively and help children learn to the best of their potential.

ASF funding has transformed the nature of school-based interventions: how they are designed, how they are implemented and how they are measured. Because children with ASD in mainstream classrooms spend most of their young lives in school, improving the quality and efficacy of interventions by working directly with school administrators, teachers and aides is incredibly important. This area of research has had a direct benefit for families whose children with autism attend public schools.



9th ANNUAL DAY OF LEARNING

3.30.2022 • New York, NY

Our 9th Annual Day of Learning was hybrid for the first time ever, bringing together over 250 people in person at the New York Athletic Club and more than 900 who signed on virtually from across the globe. This year's event once again featured TED-style talks by prominent autism researchers who discussed some of the most pressing issues on the minds of families. The afternoon session was titled "Looking at Leisure" and highlighted the importance of leisure activities including sports and music in enhancing the lives of people with autism.

Autistic self-advocate Tom Bak spoke about how music changed his life. He then treated the audience to a live performance



Samantha Els, founder of Sams Sibs Stick Together, also received the Caryn Schwartzman Spirit Award and attended the event with her parents



Dr. Susan Daniels serves as Executive Secretary of the federal Interagency Autism Coordinating Committee (IACC) and spoke about shaping new federal Priorities for Autism Research



The family of late Autism Speaks Co-Founder Suzanne Wright accepted the Caryn Schwartzman Spirit Award in her honor



Dancing Stars of Westchester

ASF had a blast at the inaugural Dancing Stars of Westchester gala, which **raised more than \$80,000 to fund critical autism research** that will help people with autism live richer, more fulfilling lives.

Modeled after the Dancing with the Stars television show, this event paired prominent New York-area personalities with talented professionals from the Fred Astaire Dance Studio of Mamaroneck in dazzling performance rounds to compete for the coveted mirror ball trophy.

Celebrity judges Teresa Giudice and Louie Ruelas of The Real Housewives of New Jersey and former Dancing with the Stars professional partner Tony Dovolani judged the 10 dancers who donated their time and talent for our cause.

We are grateful to everyone who took part in this fun and meaningful event!



ASF's eighth annual Rides FAR was the most successful yet!

Despite less-than-ideal weather conditions in some locations, the 2022 Ride raised more than a **MILLION DOLLARS** for autism research.

This year the event was expanded to include new locations in Toronto (Bay Street Rides FAR) and Maryland (Baltimore Rides FAR on the T-Rowe Price campus), in addition to the flagship Wall Street Rides FAR event in New York. Virtual riders also participated from across the globe!

Special thanks to autism mom Erin Lopes, who **spoke eloquently** at the New York event about how ASF-funded autism research improves lives.

We already can't wait for next year's event, which is set to take place on September 30, 2023! Thank you again to our incredible Rides FAR community for their dedication to raising funds for autism research that improves lives.



2022 ASF FUNDED PUBLICATIONS

Neural Response to Repeated Auditory Stimuli and its Association with Early Language Ability in Male Children with Fragile X Syndrome

An WW, Nelson CA, Wilkinson CL | **PubMedID: 36452884**

Dissecting the Molecular Basis of Human Interneuron Migration in Forebrain Assembloids from Timothy Syndrome

Birey F, Li MY, Gordon A, Thete MV, Valencia AM, Revah O, Pa ca AM, Geschwind DH, Pa ca SP | **PubMedID: 34990580**

Neurodevelopmental Copy-Number Variants: A Roadmap to Improving Outcomes by Uniting Patient Advocates, Researchers, and Clinicians for Collective Impact

Commission on Novel Technologies for Neurodevelopmental Copy Number Variants: Buttermore E, Chamberlain S, Cody J, Costain G, Dang L, DeWoody A, DeWoody Y, Dies K, Eichler E, Girirajan S, Gramm M, Halladay A, Lal D, Lalli M, Levy T, Logsdon G, Lowenstein D, Mefford H, Mulle J, Muotri A, Murphy M, Perez Palma E, Pinter S, Pollak R, Purcell R, Samaco R, Shah B, Signh K, So J, Sundberg M, Veeraragavan S, Vogel-Farley V, Wynshaw-Boris A | **PubMedID: 35931048**

Autism NPCs From Both Idiopathic and CNV 16p11.2 Deletion Patients Exhibit Dysregulation of Proliferation and Mitogenic Responses

Connacher R, Williams M, Prem S, Yeung PL, Matteson P, Mehta M, Markov A, Peng C, Zhou X, McDermott CR, Pang ZP, Flax J, Brzustowicz L, Lu CW, Millonig JH, DiCicco-Bloom E | **PubMedID: 35623351**

An Integrated Phenotypic and Genotypic Approach Reveals a High-Risk Subtype Association for EBF3 Missense Variants Affecting the Zinc Finger Domain

Deisseroth CA, Lerma VC, Magyar CL, Pfliger JM, Nayak A, Bliss ND, LeMaire AW, Narayanan V, Balak C, Zanni G, Valente EM, Bertini E, Benke PJ, Wangler MF, Chao HT | **PubMedID: 35340043**

Predictors of Treatment Response to a Community-Delivered Group Social Skills Intervention for Youth with ASD

Gerber AH, Kang E, Nahmias AS, Libsack EJ, Simson C, Lerner MD | **PubMedID: 35904648**

Neural Correlates of Face Processing Associated with Development of Social Communication in 12-Month Infants with Familial Risk of Autism Spectrum Disorder

Glauser J, Wilkinson CL, Gabard-Durnam LJ, Choi B, Tager-Flusberg H, Nelson CA | **PubMedID: 35021990**

A Prospective Evaluation of Infant Cerebellar-Cerebral Functional Connectivity in Relation to Behavioral Development in Autism

Hawks Z, Todorov A, Marrus N, Nishino T, Talovic M, Nebel MB, Girault J, Davis S, Marek S, Seitzman B, Eggebrecht A, Elison J, Dager S, Mosconi M, Tychsen L, Snyder A, Botteron K, Estes A, Evans A, Gerig G, Hazlett H, McKinstry R, Pandey J, Schultz R, Styner M, Wolff J, Zwaigenbaum L, Markson L, Petersen S, Constantino J, White D, Piven J, Pruett J | **DOI: 10.1016/j.bpsgos.2021.12.004**

Developmental Variability in Autism Across 17 000 Autistic Individuals and 4000 Siblings Without an Autism Diagnosis: Comparisons by Cohort, Intellectual Disability, Genetic Etiology, and Age at Diagnosis

Kuo SS, van der Merwe C, Fu JM, Carey CE, Talkowski ME, Bishop SL, Robinson EB | **PubMedID: 35849387**

Patterns of Sleep Disturbances and Associations with Depressive Symptoms in Autistic Young Adults

Lampinen LA, Zheng S, Lounds Taylor J, Adams RE, Pezzimenti F, Asarnow LD, Bishop SL | **PubMedID: 36082844**

Assessing the Utility of Electronic Measures as a Proxy for Cognitive Ability

Levy T, Britvan B, Grosman H, Giserman-Kiss I, Meyering K, Weissman J, Halpern D, Zweifach J, Trelles MP, Foss-Feig JH, Kolevzon A, Sanders SJ, Robinson EB, Buxbaum JD, Bishop S, Siper PM | **DOI: 10.1002/aur.2704**

Frontal Neurons Driving Competitive Behaviour and Ecology of Social Groups

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