



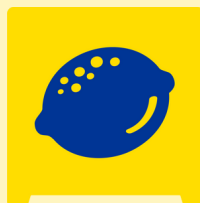
# Alex's Lemonade Stand Foundation Medulloblastoma Impact Report



[AlexsLemonade.org](https://AlexsLemonade.org)



Alex's Lemonade Stand Foundation (ALSF) emerged from the front yard lemonade stand of 4-year-old Alexandra "Alex" Scott, who was fighting cancer and wanted to raise money to find cures for all children with cancer. Her spirit and determination inspired others to support her cause, and when she passed away at the age of 8, she had raised \$1 million. Since then, the Foundation bearing her name has evolved into a national fundraising movement and is one of the leading funders of pediatric cancer research in the U.S. and Canada.



## With Gratitude

Dear Friend,

Thanks to your thoughtful support, we have been able to find new discoveries for childhood cancer treatment. ALSF-funded researchers continue to develop breakthrough treatments, lead new clinical trials, and publish their findings in peer-reviewed journals. Thanks to you, we were able to make this progress, which has positively impacted the lives of children with cancers like medulloblastoma.

Our daughter, Alexandra "Alex" Scott, believed that if we all worked together, we could cure childhood cancer. That idea of collaboration is what inspired others to help her reach her \$1 million fundraising goal. Her idea is the reason we are able to do what we do now. We are always amazed at what can be accomplished when you bring people together. The Foundation, scientists and you — we're all coming together for one common goal: to cure childhood cancer. Thank you for all you do in the fight against childhood cancer.

Until there are cures for all kids,



**Liz & Jay Scott**

Alex's Parents & Co-Executive Directors

*Alex's Lemonade Stand Foundation*



**Thanks**

to Supporters Like You

**1,000+**

## Childhood Cancer Research Projects Have Been Funded Since Our Founding

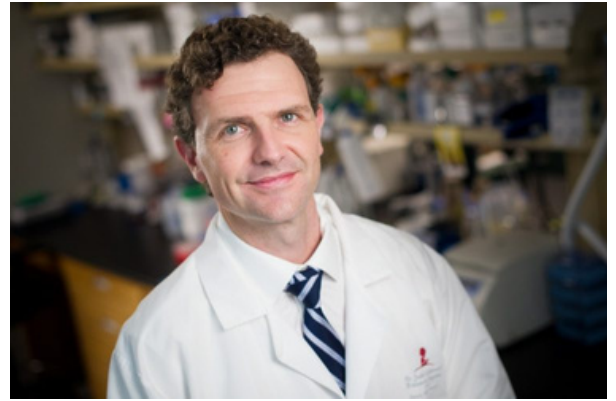
“The ‘high-risk, high-reward’ studies that ALSF supported are some of the very studies that best represent me, our science, and serve as the platform for the work we have ongoing and propose for the future. It doesn’t escape me that the support from ALSF has been instrumental, and I extend my deep appreciation to ALSF for supporting our science from the very beginning.”

— Dr. Cigall Kadoch, Dana-Farber Cancer  
Institute



“ALSF helped launch my research program 10 years ago and has supported my lab at every step along the way. Their investment in childhood cancer research has transformed the field and nurtured the development of a generation of childhood cancer researchers.” — Dr. Michelle Monje, Stanford University School of Medicine

# Research **Spotlight**



Dr. Charles Mullighan is now in the second year of his Crazy 8 Award which is focused on developing new drug approaches to treat medulloblastoma and high-risk leukemias that arise from alterations of genes that encode proteins called transcription factors. Dr. Mullighan and his team are using a new chemical biology approach known as molecular glues to exploit the protein recycling machinery of the cell to specifically degrade abnormal transcription factors driving these high-risk tumors. The project involves a team of collaborators with expertise in pediatric cancer genetics, cancer modeling, chemistry, structural biology, and "big data" analysis to develop and test these new approaches. Substantial progress has been made in the first year of the funding period. They have developed over 2,000 rationally designed molecular glues and are on target to complete synthesis of the 5,000 compounds proposed. They have also completed screening of the first ~2,000 compounds in multiple brain tumor and leukemia cell lines, and have identified several compounds showing selective activity that are proceeding into downstream assays to identify the target protein. They have established many of the cell lines and reagents needed to identify glues that specifically degrade transcription factors of interest.



## **Targeting High-Risk Medulloblastoma**

Dr. John Prensner of Dana-Farber Cancer Institute was awarded a Young Investigator Grant to dissect functional upstream open reading frames (uORFs) as a source of cancer genes in high-risk medulloblastoma. The first goal of his research is to understand how these unstudied proteins that reside in areas of gene regulation – termed uORFs – contribute to the aggressive nature of medulloblastoma. So far, he has found that a set of these uORFs are required for the proper growth and survival of medulloblastoma cells. Among these, he has identified a single top candidate, called ASNSD1 uORF, whose expression is

controlled by MYC and whose role in medulloblastoma cells is to operate with a group of proteins that modulate cancer cell functions, termed the prefoldin complex. Dr. Prensner's long-term aspiration is to catalyze this line of research for medulloblastoma, in order to open up a new vanguard of cancer target genes in this disease, which may themselves become future clinical tools or drug targets. His research will provide the initial evidence that this class of proteins is critical in medulloblastoma, and thereby spur increasing interest in their ability to serve as clinically-important genes.

# ALSF-Funded

# Projects in Medulloblastoma

Thanks to you, we have been able to fund outstanding research, leading towards breakthroughs and cures. Read through some of our recently funded research projects in medulloblastoma below.

PROJECT TITLE	INSTITUTION / PRINCIPAL INVESTIGATOR(S)	GRANT TYPE
The Role of LIN28B-let-7-PBK Axis on the Growth and Metastasis of Group 3 Medulloblastoma	Emory University / Shubin Shahab, MD/PhD	Young Investigator Grants
Dissecting Functional uORFs as a Source of Cancer Genes in High-Risk Medulloblastoma	Dana-Farber Cancer Institute / John Prensner, MD/PhD	Young Investigator Grants
IND-Enabling Studies for WNTinib, a Novel Selective Therapeutic for CTNNB1 Mutant Hepatoblastomas	Icahn School of Medicine at Mount Sinai / Ernesto Guccione, PhD & Josep Llovet, MD & Arvin Dar, PhD	Reach Grants
Small Molecule Degraders for Targeting Transcription Factor Drivers of Childhood Cancers	St. Jude Children's Research Hospital / Charles G. Mullighan, MBBS(Hons), MSc, MD, FRACP, FRCPA	Crazy 8 Awards
Drugging MYCN	Children's Hospital of Philadelphia / Yael Mossé, MD	Crazy 8 Awards
Single-cell Gene Expression and Cytosine Modification Profiling in Pediatric Central Nervous System Tumors	Dartmouth College / Brock Christensen, PhD	Single-cell Pediatric Cancer Atlas Grant
The use of hematopoietic stem and progenitor cells to reverse treatment resistance to PD-1 blockade	University of Florida / Catherine Flores, PhD	Innovation Grants
The anti-tumor immune microenvironment in the Sonic Hedgehog subclass of medulloblastoma	Emory University / Anna Kenney, PhD	Innovation Grants
Targeting symmetric division in pediatric cancers	Dana-Farber Cancer Institute / Rosalind Segal, MD/PhD	Innovation Grants

[Click here to see a complete list of ALSF-funded projects in Medulloblastoma](#)

# Meet **Childhood Cancer Heroes**

It all started when Alashujon began experiencing severe headaches. The recurrences became so frequent that completing his schoolwork was a struggle. Alashujon was constantly fatigued, falling asleep at home and even in class. Once his grades began to suffer, his mom, Chyenne, knew something was seriously wrong and decided he needed medical attention. Soon after, he was diagnosed with medulloblastoma.



Since then, Alashujon has been in treatment at Norton Children's Hospital in Louisville, Kentucky. He's in the process of conquering both chemotherapy and radiation therapy. Chyenne is so proud of her son for his fighter mentality. Every battle that life throws his way, Alashujon overcomes with his strong will and determination. His mom is hopeful that he will beat cancer so one day he can go to college and achieve his dreams of visiting outer space. Alashujon and his family think of ALSF as a beacon of hope that means one day, with enough research, a cure will be within reach.



Sylvia was in kindergarten when the frequent headaches began. Then she began to vomit almost daily. Her pediatrician recommended an MRI, but didn't suspect a brain tumor. Initially, they thought it was just a food allergy. Instead the MRI showed a tumor, and doctors diagnosed her with medulloblastoma – the most common type of brain tumor in children. Two days later, they surgically removed Sylvia's tumor.

Her treatment consisted of 30 rounds of proton radiation and four rounds of chemotherapy. Although Sylvia is finished with that portion of treatment, she is still doing occupational and physical therapy twice a week. She recently had scans, three months since completing treatment, and they all came back clear. Today, Sylvia remains cancer-free! However, during radiation, some of her cranial nerves were damaged and affected her eye movements. She is currently attending weekly vision therapy sessions to help her eyes work better together. Despite it all, Sylvia is back to swimming, joined Girl Scouts and kids' choir at church, and is as happy as ever.



**Thank You**

for all you do to help kids with cancer!

