AlexsLemonade.org

2021

ALEX'S LEMONADE STAND FOUNDATION

BRAIN TUMORS

Impact Report

Childhood cancer hero, Frankie

Thanks to your support, Alex's Lemonade Stand Foundation continues to champion lifesaving childhood brain tumor research and care for the families and children affected by this disease.

With Gratitude

Dear Friend,

The strides that childhood cancer research has made in the past few years are remarkable. New breakthrough treatments have been discovered and approved by the FDA. There are more clinical trials than ever before. Survival rates for certain types of childhood cancers have improved. ALSF remains dedicated to improving treatments for kids with brain tumors. We appreciate your support, which is making research like this possible. Thanks to supporters like you believing in research, we are painting a world free of childhood cancer.

Our daughter, Alex, 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. It's what planted the seed of Alex's Lemonade Stand Foundation. We are always amazed at what can be accomplished when you bring people together. Alex's, scientists, and you – we're all coming together for one common goal: to cure childhood cancer. Thank you for all you continue to do.

Until there are cures for all kids,

Liz & Jay Scott
Alex's Parents
Co-Executive Directors of
Alex's Lemonade Stand Foundation

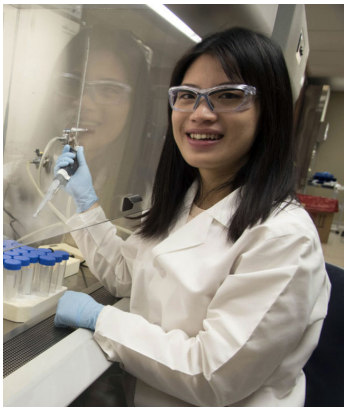
Pushing Forward Brain Tumor Research

Our mission has always been to champion lifesaving childhood cancer research and find cures for all children with cancers like medulloblastoma and DIPG.

Research Spotlight

Dr. Mariella Filbin of Dana-Farber Cancer Institute is using her 'A' Award to exploit the differentiation potential of pediatric high-grade gliomas to discover novel therapeutic opportunities. Dr. Filbin and her lab have made significant progress in uncovering the composition of single cells that form brain tumors. They recently discovered that these tumors are mostly composed of quickly dividing cells that resemble normal replicating stem cells. However, it's also true that some cancer cells can differentiate and lose their potential to form new tumors despite having the same mutations. This observation suggests that differentiation therapy, which has been successful in treating other childhood cancers, could work in pediatric brain tumors and lead to better responses than current therapies.

Pediatric Brain Tumor Initiation



Dr. Yuan Pan of Stanford University is using her recent Young Investigator Award to understand how tumor-forming cells undergo changes from healthy to tumor states in neurofibromatosis-1. Her study will determine the tumor-intrinsic and extrinsic processes of cancer initiation in NF1-associated optic glioma. Findings will help develop diagnostic and therapeutic strategies for these pediatric brain tumors.

Targeting Glutamine Addiction in Diffuse Intrinsic Pontine Gliomas (DIPGs)

With their Innovation Grant, Dr. Sriram Venneti and Dr. Costas Lyssiotis of the University of Michigan were able to translate pathologic observations they made in DIPGs to develop candidate metabolic drug inhibitors to tackle DIPG. What they discovered, unexpectedly, is that the histone H3K27M mutation that is present in more than 80% of DIPGs, specifically increases activity in two metabolic pathways in the cell, and these pathways also directly change the DNA within the cell. While inhibiting each of the two metabolic pathways individually provided a small increase in how long the DIPG animals survived, targeting both path-ways at the same time caused the DIPG animals to live much longer compared to untreated animals. While these are still pre-clinical results, they are excited to develop this new strategy toward human clinical trials. Their study was flagged by the NIH as a major breakthrough for DIPGs.

ALSF Funded Projects in Brain Tumors

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

PROJECT TITLE	INSTITUTION / PRINCIPAL INVESTIGATOR(S)	GRANT TYPE
Targeting EZHIP as a therapeutic strategy for infantile ependymomas	University of Wisconsin - Madison / Peter Lewis, PhD	Innovation Grants
Unraveling metabolic dependencies in childhood supratentorial ependymomas.	Regents of the University of Michigan / Sriram Venneti, MD/PhD	Innovation Grants
Role of H3.3-G34R mutation in pediatric high-grade glioma	University of Texas M.D. Anderson Cancer Center / Jian Hu, PhD	Innovation Grants
Dissecting the Role of FOXR2 in the Oncogenesis of Diffuse Intrinsic Pontine Glioma	Dana-Farber Cancer Institute / Jessica Tsai, MD/PhD	Young Investigator Grants
Using Neurofibromatosis-1 (NF1) to understand Pediatric Brain Tumor Initiation	Stanford University School of Medicine / Yuan Pan, PhD	Young Investigator Grants
Identifying Epistatic Suppressors of Oncohistone in Pediatric High-Grade Gliomas	McGill University / Carol Chen, PhD	Young Investigator Grants
Genetic Susceptibility to Ototoxicity in Pediatric Germ Cell Tumor Survivors	University of Minnesota / Jenny Poynter, MPH, PhD	Epidemiology 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
Targeting a Novel Epigenetic Signature in Diffuse Intrinsic Pontine Gliomas	New York University School of Medicine / Danny Reinberg, PhD	Reach Grants

In 2022, we want to fund more high impact, game changing projects like the ones listed above that will target the most deadly childhood cancers and fight for kids affected by childhood cancer around the world. You are the catalyst that makes these cutting-edge research projects possible. Thanks to you, we are one step closer to a world where cures are a reality.

Click here to see a complete list of ALSF funded projects in Brain Tumors

Meet a Brain Tumor Hero

Part of our mission is to support families in the ways they need it most and empower everyone to help cure childhood cancer.

Meet Frankie

Frankie is a fighter – he's an orange belt in karate and an astrocytoma hero.

His diagnosis came unexpectedly. He showed no symptoms until one night he woke up screaming in pain. He told his parents that his head really hurt and started throwing up. Less than 20 minutes later, Frankie was unresponsive, and his parents rushed him to the emergency room.

Frankie's CT scan showed a brain bleed, so he was flown to the children's hospital. He underwent multiple MRIs and surgeries to drain the blood from his brain. Just a few days later he was diagnosed with astrocytoma, a rare brain tumor. In the months that followed, his parents learned there were four more tumors in Frankie's spine. He began chemotherapy, which reduced his tumor by 60%.

Frankie recently relapsed and is taking a targeted drug daily. Last year, he spent weeks in the hospital battling the side effects of his cancer. One morning after over six weeks in the hospital, he woke up and told his mom, "I have an awesome life." His family is constantly blown away by his positive attitude.

Over the summer, Frankie's family celebrated his tenth birthday with a virtual lemonade stand in his honor. To his family, Alex's Lemonade Stand Foundation represents hope for the future. If enough funds are donated to research, Frankie can follow his dreams. Inspired by his own doctors, Frankie plans to become a "cancer doctor so he can send everyone's tumors to outer space."

Thank you for donating to brain tumor research. You are helping fund impactful projects aimed at finding better treatments and cures for kids like Frankie!