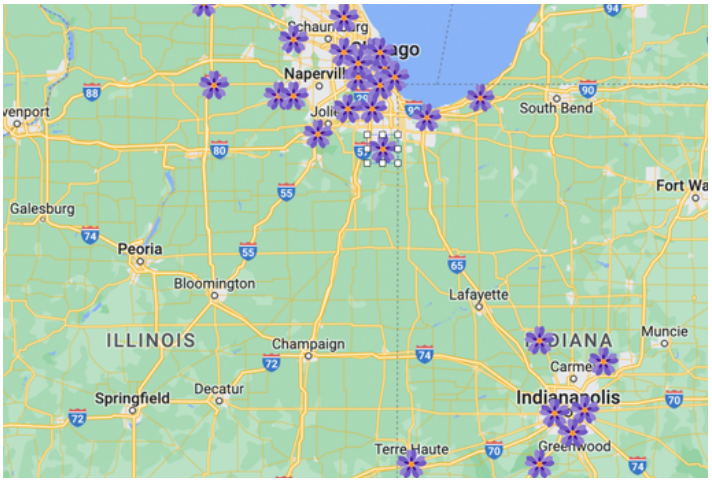
VIOLET FOUNDATION
for pediatric brain cancer

Family Spotlight

Charlie is from the Chicago suburbs and is being treated for Diffuse Midline Glioma, a type of brain tumor closely related to DIPG. Charlie's mother is a single parent who has experienced financial stress since his diagnosis, to the point that she fell 3 months behind on her mortgage and was recently served a foreclosure notice, giving her 30 days to catch her mortgage up or lose the house. Along with two other foundations, Violet Foundation was able to quickly get her the money she needed to save her house and get her focus back on Charlie.

We are pleased to share that, since our inception eight months ago, The Violet Foundation For Pediatric Brain Cancer has given **41 family grants totaling over $65,000** to families experiencing financial difficulties after their child's brain tumor diagnosis. These funds have helped families with both everyday and treatment-related expenses, helping to ease financial pressures as these families navigate their child's treatment.



Exciting News

We are proud to announce that we have approved our first ever round of research funding, in collaboration with Chadtough Defeat DIPG as a Research Partner. Chadtough was founded by the parents of Chad Carr and Michael Mosier after they were diagnosed with, and subsequently were lost to, DIPG. Their Scientific Review Board is made up of pediatric brain cancer experts around the world, and by partnering with Chadtough, we have been able to leverage their expertise and co-fund the research opportunities. In May, our Board was proud to approved **$405,000 in 2023 funding** for six research projects, described in the following pages.

Game Changer Grants

HYPOTHESIS-DRIVEN RESEARCH PROJECTS THAT REPRESENT AN INNOVATIVE APPROACH TO A MAJOR CHALLENGE IN DIPG RESEARCH, WITH POTENTIAL TO LEAD TO GROUNDBREAKING DISCOVERIES.

Robbie Majzner, Stanford University

Engineering Enhanced GD2 CAR T-Cells to Overcome DIPG Immune Resistance

This project will build on Dr. Majzner's experience with the current Stanford CAR T-cell trial, which uses immunotherapy to treat children with DIPG. Several patients have developed significant responses; however, some showed only temporary improvement or did not respond at all. Through this project, Dr. Majzner and his team aim to test and validate a new type of GD2 CAR T cell that is capable of enhanced persistence and anti-tumor efficacy, providing a more effective strategy for treating patients with DIPG/DMG.

Bilal Omer, Baylor College of Medicine

C7R-GD2 CAR T-Cells for DMG: Clinical Trial of Dual Route Strategy

New research has shown that 80% of DMG cases exhibit high levels of a protein called GD2. To target GD2, scientists are utilizing immunotherapy to destroy cancer cells. Dr. Omer and his team have improved the effectiveness of the GD2-targeting CAR T-cells by incorporating an additional gene, C7R, which enhances their anti-tumor capabilities and extends their lifespan. So far, they have treated 12 patients, with two experiencing tumor reduction exceeding 50%. Our grant with Chadtough will enable the trial to take on more patients.

Sabine Mueller & Pavithra Viswanath, University of California San Francisco

In Vivo Imaging of Diffuse Midline Gliomas

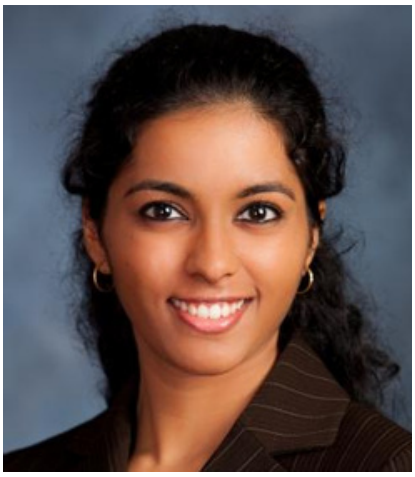
DMGs are brain tumors that often spread diffusely, making it challenging to track their progression. Current methods rely heavily on MRI scans, which do not always provide accurate information about treatment response. Dr. Viswanath and Dr. Mueller have discovered that changes in deuterated glucose metabolism can be observed within five days of radiotherapy in mice with DMGs, even when MRI scans show no visible alterations. In this study, they aim to investigate whether deuterated glucose can be used to visualize active tumor tissue and serve as an early indicator of therapy response in DMG-bearing mice. If successful, this may lead to a better way to track the effects of treatment on children's brains, allowing doctors to know more quickly whether to continue the current course or pivot to something else.

New Investigator Grants

NEWLY INDEPENDENT DIPG RESEARCHERS WORKING TO ESTABLISH DIPG RESEARCH LABS - OR - ESTABLISHED RESEARCHERS WHO HAVE NOT PREVIOUSLY CONDUCTED BRAIN TUMOR RESEARCH

Sneha Ramakrishna, Stanford University

Immune Determinants of GD2 CAR T-Cell Activity in DIPG Patients



In 2021, Stanford doctors, including Dr. Ramakrishna, initiated a clinical trial to use CAR T-cells for treating DIPG in children and young adults. This therapy trains the immune system's T cells to locate and eliminate cancer cells. Encouragingly, 10 out of 12 patients who received these CAR T-cells experienced tumor shrinkage and improvement in symptoms. This project aims to gain insights from patients to understand why CAR T-cell therapy succeeded or failed, with the aim of enhancing and optimizing the treatment.

John Prensner, University of Michigan

Targeting Aberrant RNA Translation in DIPG

In all cancers, certain genes become overactive to fuel their growth and aggressiveness. To function properly, genes need to convert their DNA code into a temporary form called RNA, which serves as a template for producing proteins that carry out cellular functions. In DIPG, many of the genes responsible for cell growth disrupt the normal process of RNA translation, leading to the production of unintended protein products. Through this project, Dr. Prensner proposes that targeting this abnormal RNA processing could be a vulnerability in DIPG that can be exploited for treatment.

Sandro Matosevic, Purdue University

Reprogramming the Tumor Microenvironment in DIPG with Engineered iPSC-NK Cells to Improve Immunotherapy

This project aims to develop a powerful and innovative immunotherapy using induced pluripotent stem cell (iPSC)-derived NK cells. These engineered NK cells aim to eliminate DIPG and enhance the activity of other immune cells against the tumor. Dr. Matosevic intends to demonstrate that combining iPSC-engineered NK cells with strategies to disrupt the DIPG TME will challenge current treatment approaches and revolutionize the way we treat DIPG.