

New “Multi-Omic” Research Projects Launched to Confront the Complexity of Glioblastoma and Pediatric Brain Tumor Treatment Development

Eliminate Cancer Initiative, National Brain Tumor Society, and Pediatric Brain Tumor Foundation applaud National Cancer Institute funding for adult and pediatric tumor sequencing projects

8 November 2018 - This week, the National Cancer Institute (NCI), the U.S. government’s principal agency for cancer research, announced funding for new adult and pediatric brain cancer research projects. The funding, totaling \$4 million, was driven by the leadership of the NCI and concerted advocacy efforts of the U.S. brain tumor community, led by the Eliminate Cancer Initiative (ECI), the National Brain Tumor Society (NBTS), and the Pediatric Brain Tumor Foundation (PBTf).

The funding stems from recommendations made by a diverse group of stakeholders, including researchers and patients, who participated in the inaugural U.S. Brain Cancer Mission Roundtable meeting in May 2018.

“The Eliminate Cancer Initiative has been championing collaborative initiatives focused on cancer prevention, as well as the discovery and development of innovative cancer treatments. Since its inception in 2017, ECI is proud to have supported Brain Cancer Missions in the US, UK, Australia, and China,” said Karen Smith, ECI’s CEO. “This generous funding kicks off our efforts in the US to bring relevant groups together with an unwavering focus on defying the odds and making cancer a treatable, non-fatal disease for the next generation.”

The two community-driven projects that received the combined \$4 million in NCI funding – with each receiving \$1 million per year for two years – are:

- **GBM CARE** (Cellular Analysis of Resistance and Evolution) – This project will use single-cell sequencing analysis to provide in-depth understanding of the genomic, epigenomic, and immunological characteristics of individual adult glioblastoma tumors. This information, combined with clinical data sets from across a large consortium of U.S. research institutions, will provide unprecedented insights into the biology of GBM and reveal new potential treatment targets.
- **Project HOPE** (High-Grade Glioma-Omics in Pediatric and AYA) – This project will also use single-cell sequencing approaches designed to capture critical information on tumor cell types and the tumor microenvironment that are missed by traditional sequencing techniques. This information will generate new discoveries about tumor growth and progression and will ultimately inform the development of more effective treatments for pediatric and young adult patients.

Both efforts will be managed out of nine cancer centers throughout the U.S. that will share technical infrastructure and resources. Critically, these institutions will, in turn, engage in data sharing and multi-institutional teamwork across numerous additional research centers in the U.S. to drive new discoveries for brain tumor patients.

“GBM Care and Project Hope are positioned to confront the complexity and treatment resistance challenges brain tumors present, which is necessary to improve the survival rates of glioblastoma and pediatric brain tumor patients,” said David Arons, Chief Executive Officer, National Brain Tumor Society. “In light of the recent Annual Report to the Nation on the Status of Cancer, the NCI clearly recognizes that the current status quo in glioblastoma and pediatric brain tumors is unacceptable, and that new efforts such as these are vital to finding better treatments. We thank the NCI for responding

to the concerns of patient advocates and the U.S. Brain Cancer Roundtable recommendations that called for using state-of-the-art sequencing approaches.”

Malignant brain tumors, commonly referred to simply as “brain cancer,” intersect three challenging disease areas – cancer, neurological disease, and rare disease. Malignant brain tumors can be devastating diseases because they are both a threat to life and sense of self. The five- and ten-year survival rates for all brain tumors are 33% and 13.5%. In adult glioblastoma (GBM), there is a much shorter five-year relative survival rate of 4.7%. In pediatrics, brain tumors are now the leading cause of cancer death in children and adolescents (ages 0-19), and sadly, those with high-grade gliomas, including diffuse intrinsic pontine glioma (DIPG), have the worst median survival at less than 14 months. There is currently no universally accepted standard of care for DIPG.

“Collaborating to fund and advocate for brain tumor research is the only way we will truly defeat this devastating disease,” said Dr. Joanne Salcido, Vice President of Research and Advocacy, Pediatric Brain Tumor Foundation. “The clinically relevant analyses at the single-cell level of Project HOPE parallel the brain tumor community’s end goals for precision medicine at the individual patient level. The results of this groundbreaking endeavor will set up the research community as a whole for greater and more rapid success in translating discoveries into curative treatment options for children and adolescents with brain tumors.”

Participating in the GBM CARE project will be researchers from Columbia University; Dana-Farber Cancer Institute; Duke Cancer Institute; Fred Hutchison Cancer Research Center; The Jackson Laboratory; Mayo Clinic; Massachusetts General Hospital; MD Anderson Cancer Center; Memorial Sloan Kettering Cancer Center; Northwestern University; University of Alabama, Birmingham; University of California, Los Angeles; University of California, San Diego; and the University of California, San Francisco.

The Project HOPE project will include investigators from Children’s Hospital of Philadelphia; Children’s Hospital of Pittsburgh; Children’s National Health System; Children’s Hospital Los Angeles; Cincinnati Children’s Hospital Medical Center; Dana-Farber/Boston Children’s Hospital; Emory University School of Medicine and Children’s Healthcare of Atlanta; The Jackson Laboratory; Johns Hopkins Hospital and Sidney Kimmel Comprehensive Cancer Center; Lurie Children’s Hospital of Chicago; Memorial Sloan Kettering Cancer Center and Weill Cornell Medical Center; Seattle Children’s Hospital; Stanford University; Texas Children’s Hospital; University of California, San Diego and Rady Children’s Hospital; and the University of California, San Francisco.

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About Eliminate Cancer Initiative

In May 2017, Australia’s leading philanthropists, Andrew and Nicola Forrest donated \$75 million to be applied as seed capital to the Eliminate Cancer Initiative (ECI), an organization that will encourage the global cancer research community to coordinate and collaborate on research to find novel therapies to treat cancer, making it non fatal for future generations. ECI’s flagship projects include tobacco prevention, innovative clinical trials, and the Universal Cancer Databank. ECI wants to (i) eliminate suffering by putting patients and families first, (ii) eliminate silos by developing a sincere culture of collaboration, (iii) eliminate competition by crossing traditional boundaries, and (iv) eliminate fear and skepticism by building trust. Visit www.eliminatecancer.org to learn more.

About National Brain Tumor Society

National Brain Tumor Society (NBTS) is the largest nonprofit organization in the U.S. dedicated to the brain tumor community. We are fiercely committed to finding better treatments and driving rapid progress toward a cure for brain tumors. We drive a multi-faceted and thoughtful approach to aggressively influence and fund strategic research, as well as advocate for public policy changes, in order to achieve the greatest impact, results, and progress for brain tumor patients. Money raised by the generous gifts from our supporters have funded groundbreaking discoveries, programs, clinical trials, and policy initiatives. Visit www.braintumor.org to learn more.

About Pediatric Brain Tumor Foundation

As the world's leading nonprofit dedicated to children and teens with brain tumors, the Pediatric Brain Tumor Foundation's mission is to *care* for families along their journey, *cure* all childhood brain tumors, and help survivors and families *thrive*. Since 1991, we have funded more than \$30 million in scientific discovery to increase survivorship, improve quality of life, and ultimately eliminate pediatric brain tumors. We also provide emotional, informational, and logistical support to help families navigate their journey, including the Starfolio Resource Notebook for the newly diagnosed, emergency financial assistance Butterfly Fund, and award-winning Imaginary Friend Society. Our signature Ride for Kids, Starry Night, and Vs. Cancer events rally supporters across the country, and regional chapters provide critical on-the-ground support to families. Visit www.curethekids.org/mission to learn more.