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THE PABLOVE FOUNDATION ANNOUNCES 2014 CHILDHOOD CANCER RESEARCH GRANT RECIPIENTS

Six Pioneering Pediatric Cancer Research Centers Receive A Cumulative \$300,000 in Grants Including Texas Children's Hospital, Johns Hopkins University, Children's Hospital Los Angeles, Seattle Children's Hospital, Oxford University, and the University of Colorado

LOS ANGELES (June 4, 2014)—The 2014 Pablove Foundation Childhood Cancer Research Grant recipients were announced today, awarding \$300,000 to six leading cancer research centers worldwide. This year's recipients are: Andras Heczey M.D. of Texas Children's Hospital/Baylor College of Medicine; Masanori Hayashi, M.D. of Johns Hopkins University; John Carter, M.D., Ph.D. of the Fred Hutchinson Cancer Research Center at Seattle Children's Hospital; Bethan Lang, M.D. of Oxford University; and Gregory Owens, Ph.D. of the University of Colorado School of Medicine. The foundation is also renewing an award to Muller Fabbri, M.D., Ph.D. of Children's Hospital Los Angeles based on exemplary progress in his first year of work.

The Pablove Foundation grants were selected by The Pablove Foundation's esteemed Scientific Advisory Committee based on their scientific excellence and innovation in addressing real and pressing issues faced by children with cancer.

"This will be our largest gift to scientific research to date, and with good reason," says Jo Ann Thrailkill, Executive Director and Co-Founder of The Pablove Foundation. "All six of these projects have tremendous potential to unearth key discoveries on some of the most complex subsets of childhood cancer. We are proud to support researchers who don't back down when faced with a challenge – metastatic liver tumors, recurrent Ewing's sarcoma and neuroblastoma, opsoclonus myoclonus syndrome, and aggressive t-cell acute lymphoblastic leukemia."

This year also marks the foundation's first research awards through a designated fund. Pablove's designated funds allow advocates to mobilize fundraising around a specific type of pediatric cancer research, as directed by the Pablove Scientific Advisory Committee. Pablove's Opsoclonus Myoclonus Syndrome (OMS) Fund is the first to reach this milestone, providing the funds necessary for two groundbreaking proposals on a severely under-researched topic. The OMS Fund was founded by a Bay Area family whose daughter is affected by the rare neurological disorder associated with neuroblastoma.

Each grantee will receive a \$50,000 seed grant to fund their proposal, with the opportunity to renew funding based on the promise of their scientific work. Seed grants provide initial funding for new ideas and young investigators, so that they may collect the results necessary to receive large-scale grants from the National Institute of Health and other sources of funding. The Pablove Foundation has funded \$900,000 in innovative pediatric cancer research since 2011.

"Childhood cancer is the leading cause of death by disease in children and teens," says Dr. Leo Mascarenhas, Chair of the Scientific Advisory Committee and Head of the Division of Oncology at Children's Hospital Los Angeles. "Our 2014 Childhood Cancer Research Grant awards fill me with optimism. As the community of support for The Pablove Foundation continues to grow, so will our ability to invest in bold solutions so children diagnosed with cancer can not only survive, but thrive."

Dr. Andras Heczey's research (*Glypican-3 specific T-cells for the Adoptive Immunotherapy of Pediatric Liver Cancers*) seeks to develop an effective immunotherapy for rare pediatric liver cancers, including hepatoblastoma and hepatocelllular carcinoma. The outcome for these cancers remains poor when doctors are unable to perform surgery on a tumor, or when the cancer has spread through metastasis. Dr. Heczey's proposal will generate T-cells from a patient's own immune system to attack the liver tumor cells. The T-cells will be modified to specifically target glypican-3, a protein that is expressed by cancerous cells but not by healthy tissues. The data has the potential to rapidly introduce a new, effective treatment for pediatric liver cancers that can be tested in clinical trials and has the potential to be applied to adults with hepatocellular carcinoma.

The project by Dr. Masanori Hayashi (*Identification and targeting of circulating Ewing sarcoma stem cells*) will focus on identifying the cells that drive growth of Ewing sarcoma (the second most common bone cancer in children, adolescents, and young adults). Intensive chemotherapy has improved outcomes for children with localized disease, but the survival rate for kids whose cancer has spread remains dismal. Identifying and targeting circulating Ewing sarcoma cells will be the key to preventing and curing disease before it spreads throughout a child's body. Additionally, Dr. Hayashi will investigate the role of WNT signaling (gene transcription) in modulating Ewing sarcoma metastasis by using the LGK974 inhibitor. The research will build knowledge regarding the biology of metastatic disease. The ability to distinguish between patients with previously undetectable residual disease and those with no disease would allow doctors to identify patients who require further therapy, while sparing those who are already cured from unnecessary and potentially toxic treatment.

"I am so honored to be given this wonderful opportunity from The Pablove Foundation to pursue my research," says Dr. Hayashi, a third year fellow at Johns Hopkins Sidney Kimmel Comprehensive Cancer Center. "I am excited about what I will be able to find and how I can hopefully impact this horrible disease, which would have never been possible without the generous support of The Pablove Foundation."

T-cell acute lymphoblastic leukemia (T-ALL) is a highly aggressive blood cancer in children, and treatment has lagged behind that of the more common pre-B ALL. Dr. John Carter's research (*Identification of novel cdk4/6 effectors in T-cell acute lymphoblastic leukemia*) will investigate the inappropriate activation of the CDK4/6 cyclin-dependent kinase in children with T-ALL. This enzyme may contribute to the unchecked proliferation of T-ALL cells. Few validated targets of these CDKs currently exist, and Dr. Carter's research seeks to identify new methods to restore the checkpoints that would normally guard against growth of T-ALL cells. The proposal represents a novel effort to explain oncogenic mechanisms of this important cancer-relevant biochemical pathway.

OMS is a severe neurological disease of early childhood resulting in severe motor, cognitive, and behavioral complications. The disease is associated with (and believed to be triggered by) neuroblastoma. The Pablove Foundation's research grants through the OMS Fund represent pioneering attempts to identify the antigen that triggers the condition in addition to the antigenic

target of the disease. Dr. Bethan Lang's project (*Detection of novel autoantibodies in children with OMS*) will use mass spectrometry to isolate the antigens from antibodies generated by patients with OMS. This knowledge will allow doctors to better target treatment through immunotherapy. Dr. Gregory Owens is a multiple sclerosis expert lending his insight to OMS through collaboration with OMS authority Michael Pranzatelli, M.D. The project (*Targets of the Intrathecal B-Cell Response in Pediatric Opsoclonus Myoclonus Syndrome*) seeks to determine whether antibodies generated by the B-cells in children with OMS are targeting proteins in the brain, and whether that process is directly responsible for causing disease. The proposal has the potential to generate diagnostic implications as well as disease modulation and prevention.

Dr. Muller Fabbri's research (*miRNAs secreted by tumor associated macrophages and resistance in Neuroblastoma*) is addressing the challenge of drug resistance in neuroblastoma, which is the most prevalent cancer in infants and most common solid tumor outside the brain in children. Dr. Fabbri is studying a unique communicating mechanism between neuroblastoma tumor cells and cells of the immune system. His preliminary research indicates that tumor cells send signals to immune cells, which in turn respond to the tumor cells by sending back signals to promote cancer survival and resistance to chemotherapy. By interrupting this cross-talk, Dr. Fabbri hopes to discover methods for preventing drug resistance in this difficult disease. The Pablove Foundation's 2013 Grant to Dr. Fabbri supported the generation of fundamental preliminary data, allowing the researcher to publish a significant paper on the issue in *Nature Reviews Drug Discovery*. A second year of funding will allow Dr. Fabbri to complete his current investigations and help secure his first R01 Research Project Grant from the National Institutes of Health.

"I feel very privileged and extremely proud to be supported by The Pablove Foundation," adds Dr. Fabbri. "*None* of the progress I've made so far would be possible without the foundation's support. I do not possess enough words of appreciation for continuously believing in my science and in our common mission towards saving more children's lives."

This is the fourth year The Pablove Foundation has awarded Childhood Cancer Research Grants. The foundation has also funded projects at the Mayo Clinic, Roswell Park Cancer Institute, Lombardi Cancer Center at Georgetown University, Sydney Children's Hospital, Dana-Farber Cancer Institute, Children's National Medical Center, and Children's Hospital of Wisconsin/Medical College of Wisconsin. A list of each grant is available at <u>pablove.org/grants</u>.

About The Pablove Foundation

The Pablove Foundation is named after Pablo Thrailkill Castelaz, the son of Jo Ann Thrailkill and Jeff Castelaz and the little brother of Grady Gallagher. Pablo was six years old when he lost his valiant yearlong battle with bilateral Wilms Tumor, a rare form of childhood cancer. The mission of The Pablove Foundation is to fund pediatric cancer research and advances in treatment, educate and empower cancer families, and improve the quality of life for children living with cancer through hospital play, music and arts programs. For more information on The Pablove Foundation, please visit <u>pablove.org</u> and follow Pablove on Facebook at facebook.com/pablovefoundation and Twitter at @pablove.

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