



## Hope Funds for Cancer Research

Press Release

### Announces Fellow's Appointment at the Cambridge University

For Immediate Release

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**Newport, RI - December 22, 2015** - After working for six years at Children's Hospital Boston/Harvard Medical School in the laboratory of Carla Kim, Ph.D., Joo-Hyeon Lee has received an appointment at the University of Cambridge starting in January 2016. Dr. Lee will be starting her own laboratory in the the Stem Cell Institute at the University of Cambridge and will receive five years and 1.5 million pounds of support from the Wellcome Trust.

"We are delighted to learn of Dr Joo-Hyeon Lee's receipt of a Sir Henry Dale Fellowship to the Stem Cell Institute at the University of Cambridge in the UK. This fellowship, which is sponsored by both the Wellcome Trust and The Royal Society, is an extremely prestigious award and the Medical Research Council Stem Cell Institute is a world leader in the emerging field of tissue regeneration after surgery," said Dr Adrian Hobden, Chair of the Programs Committee for the Hope Funds for Cancer Research.

Dr. Lee's work has brought new technological approaches to lung cancer research by working to understand the role of the microenvironment and the molecules that regulate lung tumor growth. Lung cancer is estimated to cause 160,000 deaths in the United States each year, a number that has remained unchanged after decades of cancer research. As a disease, cancer involves not only the tumor cells themselves, but also their surroundings, referred to as microenvironments. While this concept is accepted, many cancer researchers do not consider the tumor microenvironment idea in their experimental approaches.

#### About Joo-Hyeon Lee, Ph.D.

Joo-Hyeon Lee, Ph.D. joined the laboratory of Carla Kim, Ph.D. at Children's Hospital Boston, Harvard Medical School in 2009, as a postdoctoral Fellow, after having received her Ph.D. in molecular genetics from Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea. Joo-Hyeon was a Hope Funds for Cancer Research Fellow from 2011 - 2014. Her Fellowship focused on examination of interactions between lung cancer cells and their microenvironment.



Drs. Vicki Sato, Leni Jacob and Joo-Hyeon Lee at the Hope Funds Women & Science Program

The Kim Lab is a pioneer group, combining lung cancer and lung stem cell biology. The lab developed the first *in vivo* assay to functionally test lung tumor-propagating cells from murine and human lung cancer samples, and recently Dr. Lee has newly established a 3D co-

culture system that enables the cultivation of Kras lung tumor cells as well as lung stem cells, BASCs, for functional assays. Importantly, this is the first time anyone has been able to maintain Kras lung tumor cells in culture. Funding from the Hope Funds for Cancer Research has made it possible for Dr. Lee to establish this assay, to determine endothelial cells are targets in lung cancer, and to identify Tsp1 as a crucial regulator in lung cancer and lung homeostasis. During Dr. Lee's award period, she published two major articles showing the characterization of the heterogeneity of SPC-expressing lung progenitor cells in transgenic reporter mice (Lee et al. AJRCMB 2013) and demonstration of a new regulatory signaling pathway, Bmp4-calcineurin/NFATc1-Tsp1, operated between lung stem cells and endothelial cells to control the lineage specification of BASCs (Lee et al. Cell 2014). Dr. Lee is completing a manuscript to show that the new signaling pathway, calcineurin/NFATc1-Tsp1, in endothelial cells impacts Kras tumor progression via regulating tumor angiogenesis. Dr. Lee states that "the award has given me important learning experiences including media training to describe my research in general situations, such as annual Program functions to meet sponsors, donors and other fellows. These activities have further motivated my research and career." Importantly, the annual Fellows Scientific Meeting provided Dr. Lee the opportunity to discuss her work with Hope Funds Scientific Advisors, who are the leaders in the cancer research field, and to form collaborations with other fellows. From the experience Dr. Lee says, "I can undoubtedly state that funding from the Hope Funds for Cancer Research provided me with the unique opportunity to contribute detailed mechanistic insight to the lung cancer community. The research momentum I have enjoyed with my fellowship would be halted without this funding." In 2014, Dr. Lee's her goals of becoming an independent research scientist and making significant contributions to the lung cancer biology field. Specifically, her goal was to lead an academic laboratory that studies the intersection of lung cancer and stem cell biology using both basic and translational studies. With this appointment to Cambridge, she is on her way.

The results of Dr. Lee's work were published in the journal *Cell* in January 2014, [Click here to view paper.](#)

Dr. Lee currently serves on the Hope Funds for Cancer Research's Council of Advisors.

### **About Cambridge University**

The University of Cambridge is a collegiate public research university in Cambridge, England. Founded in 1209, Cambridge is the second oldest university in the English-speaking world and the world's fourth-oldest surviving university. Cambridge is formed from a variety of institutions which include 31 constituent colleges and over 100 academic departments organized into six schools. Perhaps most of all, the university is renowned for a long and distinguished tradition in mathematics and the sciences. Among its alumni are Sir Isaac Newton, Sir Francis Bacon, James Clerk Maxwell, and Charles Darwin. Subsequent Cambridge biologists include Francis Crick and James Watson, who worked out a model for the three-dimensional structure of DNA whilst working at the university's Cavendish Laboratory; fellow Cambridge graduates Maurice Wilkins and especially Rosalind Franklin produced key X-ray crystallography data, which was shared with Watson by Wilkins. Wilkins went on to help verify the proposed structure and win the Nobel Prize with Watson and Crick. Despite Cambridge's delay in admitting women to full degrees, Cambridge women were at the heart of scientific research throughout the 20th century. Pioneering biochemist Marjory Stephenson studied at Cambridge, as did plant physiologist Gabrielle Howard, and social anthropologist Audrey Richards. Psycho-analyst Alix Strachey, who with her husband translated the works of Sigmund Freud. Kavli Prize-winner Brenda Milner, co-discovery of specialized brain networks for memory and cognition, was also at Cambridge. Veterinary epidemiologist Sarah Cleaveland has worked to eliminate rabies in the Serengeti. Ethologist Jane Goodall, the world's foremost expert on chimpanzees did a PhD in Ethology at Cambridge's Darwin College. Anthropologist Dame Alison Richard, former vice-chancellor of the university, is a graduate of Cambridge University's Newnham College.

### **About Hope Funds for Cancer Research**

The Hope Funds for Cancer Research was formed in 2006 by a group of concerned individuals who have experience in oncology, intellectual property law, investment banking, philanthropy,

sociology, and the arts to establish a funding vehicle that would take a rational scientific, medical, and investment approach to granting money to the most interesting and promising research efforts to address the most difficult-to-treat cancers, including pancreatic, lung, liver, sarcomas, esophageal, brain, gastric, and ovarian cancers, and rare lymphomas, leukemias and MDS. These cancers are insidiously aggressive illnesses that kill most of their victims within months, even with aggressive chemotherapy. The Trustees of the Hope Funds for Cancer Research believe that funding research that could lead to breakthroughs in these areas and increase life expectancy in these types of cancers is at the core of our mission. The Hope Funds for Cancer Research is a 509 (a)(1) charity under 501(c)(3) of the Internal Revenue Service's code. For additional information about the organization, please visit <http://www.hope-funds.org> or call 401-847-3286.

*Hope Funds for Cancer Research: Advancing Innovative Research in Understudied Cancers*

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