

Fernando D. Camargo appointed first Regenerative Biology Endowed Chair

Boston Children's Hospital Department of Pediatrics has named Fernando D. Camargo, Ph.D. as its first Regenerative Biology Endowed Chair, in recognition of his scientific contributions and strong leadership. Dr. Camargo is a Principal Investigator in The Stem Cell Program in the Division of Hematology/Oncology at Boston Children's Hospital and Professor in the Departments of Stem Cell and Regenerative Biology and Pediatrics at Harvard Medical School. He is also a principal faculty member of The Harvard Stem Cell Institute and the Dana Farber Cancer Institute. Dr. Camargo commented, "I feel incredibly privileged to have undertaken my scientific journey at the Stem Cell Program at BCH. I cannot think of a more exceptional and supportive scientific environment. I am especially thankful to Dr. Len Zon and the hospital leadership for their unparalleled guidance and commitment to support young scientists. Our work would not have been possible without my wonderful current and former lab members and our outstanding scientific collaborators." Dr. Leonard Zon, Director of the Stem Cell Program, remarked, "Fernando's work has been the most pioneering research studying stem cell clones. It will have impact on blood diseases and cancer."

Dr. Camargo's undergraduate studies were at the University of Arizona and he received a Ph.D. from Baylor College of Medicine in 2004, studying the developmental plasticity of adult somatic stem cells in the laboratory of Dr. Margaret Goodell. Dr. Camargo then became a Whitehead Fellow at the Whitehead Institute for Biomedical Research, where he directed a laboratory focused on the regulation of stem cell proliferation and differentiation and the mechanisms that control tissue size in mammals. He joined Boston Children's Hospital and the Stem Cell and Regenerative Biology Department at Harvard University in 2009. He has been a fully tenured professor since 2016.

Dr. Camargo's lab has had a long-standing interest in deciphering the mechanisms that control mammalian tissue growth. Particularly, his lab has made seminal contributions to the discovery and understanding of the Hippo signaling pathway. Hippo is a biochemical cascade that controls the development of our organs, and his work has discovered important mechanisms by which tissues control the number of cells in them. Dr. Camargo's work has been very influential to establish Hippo pathway components as novel therapeutic targets in a wide range of epithelial malignancies. Pharmacological agents that act on the Hippo pathway, some generated in his group, are at different stages of pre-clinical testing for cancer therapy. Thus, his work has been critical for the discovery of a new class of cancer drugs.

Dr. Camargo's innovative and ground-breaking work has also extended to the field of stem cell biology. His group has developed technologies that allow for cellular barcoding, a technique that allows for genetic tagging and tracing of thousands of cells at a time, providing an unprecedented measure of cellular histories at single cell resolution. Using these tools, his lab has defined novel biological properties of blood-producing stem cells, basically re-writing the textbook knowledge about lineages and fates in the blood. This has included identifying novel cellular sources of platelet and lymphoid production within the bone marrow, identification of a number of key regulators of the hematopoietic stem cell state, and the identification of novel bone marrow micro-niches that control stem cell activity. These discoveries have important implications for treatments that would improve the safety and efficiency of bone marrow transplantsations.

More recent refinements of these cellular barcoding tools are enabling unprecedented studies of cell lineage tracking during development, tissue regeneration, and cancer. Dr. Camargo is now extending his cellular barcoding work to the study of leukemias and solid tumors to map at high-resolution, the cellular lineages and trajectories of tumor cells, and to obtain a life-recording of tumor cells as cancer progresses.

Dr. Camargo was the first underrepresented minority professor in the Stem Cell Program. He has been fully committed to recruiting and training minority scientists at the research assistant, undergraduate

and postdoc levels. He has had more than seven underrepresented minority scientists train in his group. He frequently gives talks and participate in panels dealing with minority representation in the sciences. His lab also participates in summer programs aimed at hosting minority students.

Because of his continuous record of innovation and scientific discovery, Dr. Camargo has been the recipient of multiple scientific honors. He is the recipient of the NIH Director's New Innovator Award, a PEW fellow in the Biomedical Sciences and special fellow of the Leukemia and Lymphoma Society. Most recently, he has received the Vilcek Prize for Creative Promise in Biomedical Science, the International Society of Stem Cell Research's Dr. Susan Lim Award for Outstanding Young Investigator, and has been named a Howard Hughes Medical Institute Scholar.

Please join us in congratulating Dr. Fernando Camargo as the first Boston Children's Hospital Department of Pediatrics Regenerative Biology Chair.